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Institute of Paper Chemistry Addition Opened

Fifty Leading Executives of Paper Industry Attend Observance of Event—Executive Committee and Board of Governors of American Paper and Pulp Association Present—Several Officers of TAPPI Also Attend the Sessions

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 8, 1936—Formal opening of the $100,000 addition to the Institute of Paper Chemistry, Appleton, Wis., was made an outstanding occasion when more than fifty executives of member mills spent Thursday and Friday of last week there in observance of the event. They were guests at an inspection of the Institute and the new two-story stone and concrete building, heard addresses by staff members, and were entertained at dinner, luncheon and golf at the North Shore Country Club.

The executive committee and board of governors of the American Pulp and Paper Association also attended the festivities, and on Saturday held their June meeting at the home of F. J. Sensenbrenner, president of the Kimberly-Clark Corporation, at Neenah, Wis. Mr. Sensenbrenner is president of the Association.

Several of the officers of the Technical Association of the Pulp and Paper Industry also were present at the Institute sessions.

Major Installations

Much needed facilities are made possible by the large new Institute unit. The major installations are two large departments, one on each floor to house large papermaking machines for experimental purposes. While the Institute has had a complete pulp mill in miniature for some time, it previously lacked the paper machines.

Floor space is practically doubled by the addition. More adequate office and laboratory facilities are thus provided, including a suite of rooms and a private laboratory for Dr. Otto Kress, technical director, an office for John Strange, assistant executive secretary, and larger quarters for Howard W. Morgan and Dr. Ben W. Rowland, research associates. Several cubicles for small research projects, a dye laboratory and storage rooms have been built in the basement. Machinery will be installed during the summer, ready for operation when the fall term begins.

Dr. Kress Discusses Research Work

In an address to the paper mill executives at an afternoon session at the North Shore Country Club, Dr. Kress explained how many problems which had baffled mill organizations had been solved by the Institute because of its totally different viewpoint. The Institute, he said, is in the unique position of being ready to accept problems which the paper mill organization, through lack of facilities and personnel, may not be in a position to undertake.

"With the record to date of which the staff of the Institute can be justly proud," said Dr. Kress, "and with an increasing personnel and equipment and facilities, I feel confident that we can be of ever increasing service to the pulp and paper industry in the years to come."

Since work of this nature was first initiated, Dr. Kress added, the Institute has had 365 active projects, all of which have had a direct practical value. The work to date has included practically every line of pulp and paper manufacture.

Dr. Rowland Describes Predominating Types

Dr. Rowland, research associate and professor of colloid chemistry, also spoke on the history and predominating types of modern research. "There is abundant evidence," he said, "that industry has found a way to liquidate the high cost of research and to realize its benefits as an integral part of sound business policy. Industrialists have faced the facts about research; they have recognized its high cost and its time lag of from three to ten years between the inception of an investigation and its practical solution; they have found that it has been necessary to enrich the basic knowledge of their special field as a prerequisite to advancement; that properly controlled research will steadily yield stabilizing developments, rather than those spasmodic and risky departures from current practices such as create anxiety; that indeed, organized research is fundamental in sound corporate economy, and a guarantee of the future."

Dean Lewis Explains Curriculum

Development of the Institute curriculum was explained by Dr. Harry F. Lewis, dean. The primary aim is the training of technical men for the pulp and paper industry, he said. The first year's course is devoted almost entirely to the fundamental sciences underlying the pulp and paper industry. The second year marks the opening

(Continued on page 42)

Shareholders Approve Container Financing

Authority Secured to Proceed With Construction of New Pulp and Paper Mill In Florida—President Paepcke Declares Company's Business Is Running Ahead of Last Year—Payment of Common Dividend Anticipated Soon

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., June 8, 1936—Stockholders have approved the financing necessary to complete the new kraft pulp and paper mill of the Container Corporation of America which is soon to be constructed in Florida. Walter P. Paepcke, president, reported that the company was "coming very close to a common dividend condition," and stated that a dividend will be considered at the meeting of directors to be held next month. Action on the new preferred stock issue was deferred due only to the fact that the exact rate has not as yet been determined.

The company's business is running 10 per cent ahead of a year ago in tons and slightly ahead of last year in dollar volume, according to Mr. Paepcke. It is reported that directors are enthused about the prospects of the new mill and the other financing to be completed when the preferred stock is issued. They indicate that the move not only carries the promise of increased profits but that building of the mill will quicken the approach to the better profit stage.

Association Activities

The Midwest Division of the Salesmen's Association of the Paper Industry spent a portion of its June 1 meeting period reviewing the golf outing of the preceding week. The association plans to continue its regular weekly meetings through June but is strongly considering the possibility of omitting any meetings during July and August in the belief that the outings themselves may serve to get the energetic group through the summer period. The next golf outing is scheduled for Friday, June 26, at the Bob-O-Link Golf Club.

The Groundwood Paper Manufacturers Association will hold a general meeting at the Blackstone Hotel, Chicago, on June 12. The session will convene at 10 o'clock in the morning and, it is reported, will be devoted to general marketing and merchandising problems confronting the groundwood division of the industry.

Paper Market Outlook

Having passed a month of ordinary seasonal decline in market activity, Chicago paper executives are counting on June to provide a contra-seasonal gain based on improved retail conditions and on an enhancement of business in general. The market upturn in retail sales, reflected in newspaper advertising as well as in retail consumption in general, is expected to be swelled this month with payment of bonus money. On this and other basic improvement local commentators base their opinion of contra-seasonal improvement in June.

Virtually all of the markets were comparatively quiet during the final week of May, the holiday adding to the lightness of volume. However, the markets continue basically strong with no signs of weakening except as reported in one or two grades of certain lines. Bonds and ledgers experienced a lull in demand though the various grades held well with sulphite bonds reported as continuing to hold a comparatively stable condition. Krafts were in only fair demand but confident of an upturn in the near future. Books held a fairly active spot in the week's business while covers were in a satisfactory position. Groundwoods reported no change in position while the newsprint market was credited with being somewhat better. Waste papers reflected the strong undertone of the regular markets and closed the week at slightly higher levels.

News of the Industry

With a number of Chicago manufacturers planning to stage well prepared exhibits and with quite a few Chicagoans taking advantage of the close proximity of Grand Rapids to Chicago, interest here is centering in the Seventeenth Annual Convention of the American Pulp and Paper Superintendents Association to be held at the Michigan city on June 24, 25 and 26. The pulp and paper exposition is credited with being part of the reason why more than 600 reservations have already been received for the three day program which includes an authoritative discussion of almost every conceivable item of interest to the paper industry.

From across the state borders in Ewing, Indiana, comes news that J. K. Kieffer, general manager of the Kieffer Company has secured another patent tending to make even more practical the product of "Shoksorb" made by the Indiana concern. The patent is on certain features of moulded indented boards and covers the process of indenting papers with a diagonal design with the indentations spread in such a way that no flat surfaces appear in the web of the paper. It is understood that royalties from this and the other three patents secured earlier by Mr. Kieffer are turned into the Kieffer plant and business itself.

The Link Belt Company has published a new 200 page catalog concerning features of power transmission equipment. The catalog, Number 1500, will serve as an adequate and informative guide to power transmission matters.

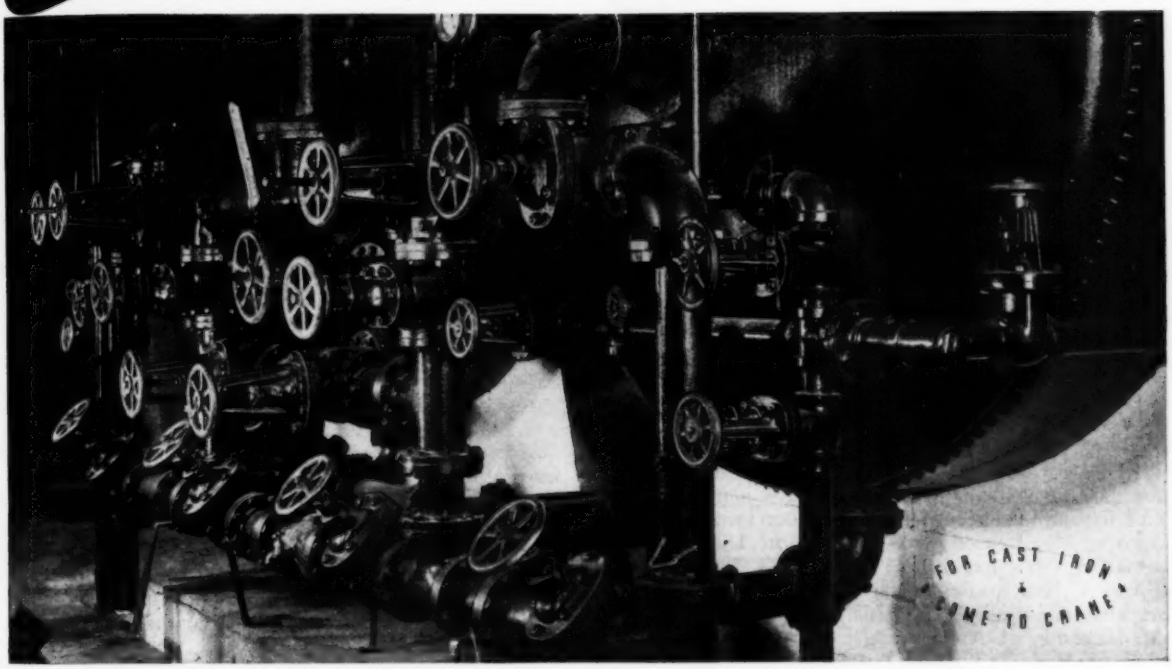
The J. W. Butler Paper Company; James White Paper Company, and Parker Thomas & Tucker are three concerns which have recently added "Huronette" to their stocks. The paper, manufactured and introduced early in April by the Port Huron Sulphite and Paper Company, is a bleach white plate finish stock in four sizes and weighs from 80 to 225 pounds. Approximately 33 outlets have been secured for the new product which is reported as suitable for bristols, covers, envelopes, index, document and other uses of a similar nature.

Wheelwright bristol and index papers have been given additional publicity in the local markets by the issuance in Chicago of a series of six portfolios by the LaSalle Paper Company.

Pictorial Paper Package Corp. Files

WASHINGTON, D. C., June 10, 1936—The Pictorial Paper Package Corporation, of Aurora, Ill., has filed a registration statement with the Securities and Exchange Commission covering 78,000 shares of $5 par value common stock of which 68,000 shares are presently held by two stockholders. The remaining 10,000 shares are reserved for the company for the exercise of an option given to A. H. Harrison of A. H. Harrison & Co., of Chicago who is the principal underwriter.

Stop Leaks AT THE SOURCE



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● Steam, water and processing liquids are too valuable to waste. But the frequent checking of piping, fittings and valves to reduce that waste is an annoyance and an expense which seems sometimes to outweigh savings. By standardizing on Crane Valves and Fittings, many mills have materially reduced both waste and maintenance because of the increased dependability of their piping equipment.

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The valve bodies and fittings are of exceptionally strong, close-grain cast iron made under close metallurgical control with the material properly distributed.

There are Crane Standard and Extra Heavy Cast-Iron Valves and Fittings for all pulp and paper-mill requirements to which this material is suited. Where special conditions prevail, Crane is prepared to meet your requirements. Stocks are maintained at the branch or distributor nearest you.

Let Profits Pay for Plant Improvements. Use the Crane Finance Plan.

When you attend the American Pulp and Paper Mill Superintendents' Convention in Grand Rapids June 24, 25 and 26, plan to visit Crane Co. in Chicago. Interesting tour through Crane's extensive Chicago plant being arranged. See Tom Ireland at the Convention.

CRANE

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VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

Dill & Collins Directors Honor H. P. Carruth

Former President of Company and Vice-President of Mead Corp., Entertained At Luncheon In the Down Town Club, Philadelphia, Before Taking Up His New Post As General Manager of Brown Company, of Berlin, N. H.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., June 8, 1936—The Board of Directors and the present president, Sidney Ferguson, of Dill & Collins, were hosts at a luncheon given during the week at the Down Town Club in honor of H. P. Carruth, the former president of Dill & Collins and vice-president of the Mead Corporation in honor of his appointment as general manager of The Brown Company, of Berlin, N. H.

Mr. Carruth spoke very kindly of his pleasant relations while here in Philadelphia and the contacts and friendships he had made, and stated he was going on to a new job with the confidence that he had been greatly assisted by his long experience with the trade. Mr. Ferguson expressed his happiness that Mr. Carruth had gone up another rung of the ladder, adding that he was very glad to come to Philadelphia and was looking forward to making pleasant contacts such as Mr. Carruth had made.

Mr. Ferguson comes from the Mead Corporation's New York office where he had been treasurer of the company; he will continue as treasurer in addition to being president of Dill & Collins.

Gathered around the festive board to do honor to Mr. Carruth were William R. Ingersoll, sales manager of Dill & Collins, and the executives of their four Philadelphia distributors; Mr. Benson, vice-president of Dill & Collins; Norman H. Fort, president of Thomas W. Price Company; William A. Hentz, sales manager of the Thomas W. Price Company, and George N. Ernst; Richard Hartung, and John Hartung, of A. Hartung Company; Leonard Raymond, of Raymond & McNutt Company; and Messrs. Wilcox, Walter and Furlong, members of the firm of Wilcox, Walter, Furlong Paper Company.

Association Activities

The first of a series of round table luncheons was held by the Fine Paper Division of the Paper Trade Association of Philadelphia, on Wednesday, June 3, at the Down Town Club. This series of luncheons is being arranged for the purpose of open and informal discussion of the Questions and Answers being conducted by the Merchandising Committee under the direction of William A. Henta, the Philadelphia chairman. Four questions were selected for discussion at this meeting, and valuable and instructive information was exchanged. Unusual and keen interest was displayed by the members, particularly in regard to the methods of developing of salesmen.

Plans were suggested and enthusiastically accepted whereby some activities should be started in the fall, designed to set up an educational scheme for young salesmen in the paper business in Philadelphia. Mrs. Doris E. Lewis, executive secretary of the Paper Trade Association here, will make arrangements during the summer months so that these activities can get off to an early start. Copies of the answers to the Questionnaires are being prepared by Mrs. Lewis and will be distributed to the membership in the near future, so that a study of them may be made between now and the next meeting, Wednesday, June 17.

Reservations are pouring in for the Outing of the Philadelphia Paper and Cordage Association, to be held on Friday, June 12 at the Manufacturers Country Club, Oreland, Pa. At this outing an innovation will be introduced in the form of a straw vote of all those present for next President of the United States.

At the regular luncheon meeting of the association which will be held on Friday, June 19 at 12 o'clock in the Adelphia Hotel, the guest speaker will be Judge William M. Lewis of the Municipal Court, who will speak on association work. This will be vitally interesting to every member and President George K. Hooper is hopeful of a capacity attendance.

News of the Industry

A new portfolio has been issued by Wolf Brothers, 349 North 12th street, and although it has only been out a few weeks, this new portfolio of designs and papers for merchandise bags has been acclaimed by jobbers' salesmen as a rare selling tool.

In planning this edition, Wolf Brothers have taken particular care to make it possible for salesmen to actually close sales "out of the book." In the portfolio are sample sheets of all of this manufacturers' thirty stock papers. In one group are the ten papers in which Handelok Carry Bags and Notion-Millinery bags are kept in stock ready for imprinting. The other twenty papers shown are made up on order. On these swatches are printed twenty stock designs which retailers may use without cost.

A new feature this year for Wolf Brothers is what is known as Stock bag service, and judging from the reaction of jobbers this innovation in bags is destined to develop into a brilliant success. This company announces the fact that it is now possible to sell Wolf Bags in assortments including as few as 1000 of a size and paper. Heretofore, minimum quantity restrictions have made selling small stores and sample orders somewhat difficult.

Paper Manufacturers Company, Inc., 5th and Willow streets, is distributing through their merchants an attractive new sample book showing the complete line of Perfection Gummed Papers. The book is spiral bound and tabbed for easy index purposes to show English finish, super, colored mediums, coated lithos and special grades of gummed papers.

Announcement is made of appointments of the following as sales agents and the new lines they will stock:

Frank W. Berry, Index and Bristols, manufactured by Franklin Paper Company.

Garrett Paper Company, Beta and Jefferson Index and Slate and National Post Card, by Franklin Paper Company; Board of Trade Bond and Dresden Ledger, by Mt. Holly Paper Company; Gibraltar Onion Skin, by Millers Falls Paper Company, and Coated Book, by Rex Paper Company.

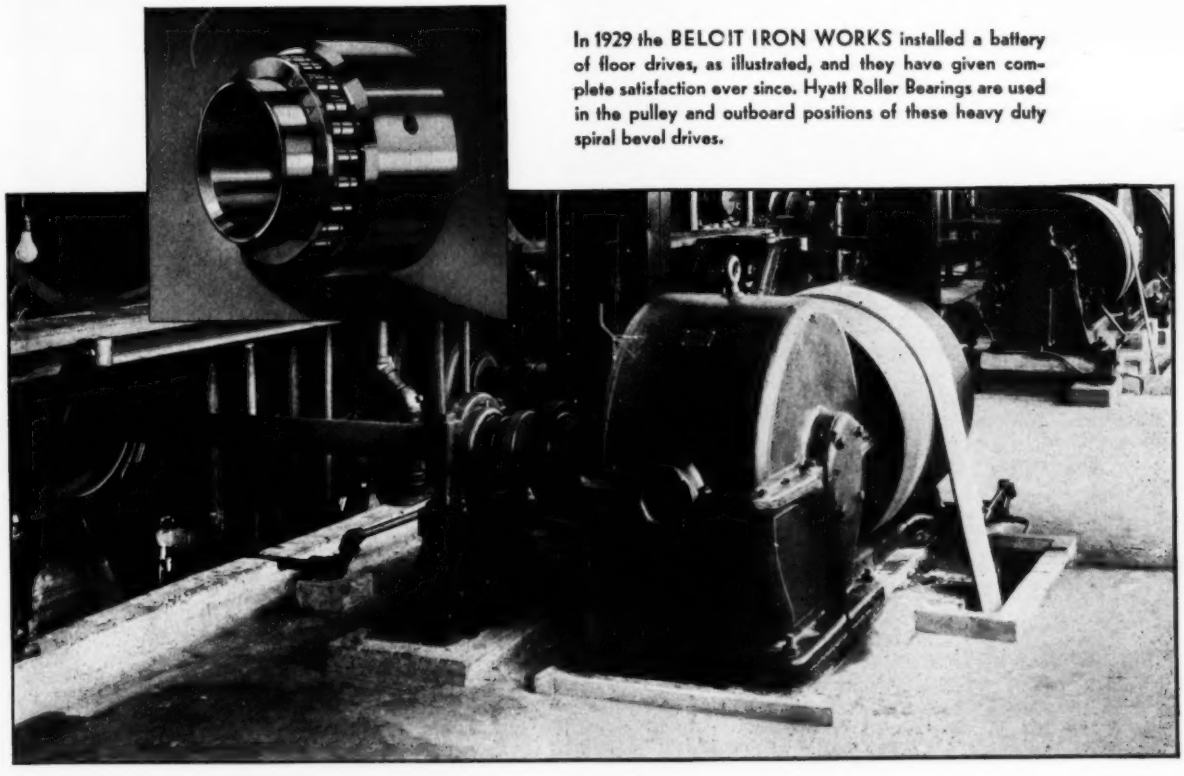
Matthias Paper Corporation, Brilliant Box Covers, by Kimberly-Clark Corporation.

Philadelphia Card and Paper Company, Mountie Book Papers, by Northwest Paper Company.

The Thomas W. Price Company, Falcon Blanks, by Champion Paper and Fibre Company, and Moistrite Bond by Mead Sales Company.

Satterthwaite-Cobaugh Company, Gothic Bond, by Parsons Paper Company, and Rockledge Onion Skin by Millers Falls Paper Company.

Schuylkill Paper Company, Kamargo Mikado, by Knowlton Brothers.



In 1929 the BELOIT IRON WORKS installed a battery of floor drives, as illustrated, and they have given complete satisfaction ever since. Hyatt Roller Bearings are used in the pulley and outboard positions of these heavy duty spiral bevel drives.

JUDGE THEIR MERIT *by their Performance!*

You'll make no mistake if you judge Hyatt Roller Bearings by the Companies that use them. Many of these Companies, over a long period of years, have found that the correct design, precision manufacture, and sound application engineering behind Hyatts mean smoother operation, longer life, and more dependable performance of Hyattized equipment.

If you have any bearing problem, in the machines you manufacture or in your own operating equipment, Hyatt plant and field forces are at your disposal. Hyatt Roller Bearing Company, Newark, Detroit, Chicago, Pittsburgh, San Francisco.

HYATT
ROLLER BEARINGS
PRODUCT OF GENERAL MOTORS

Demand for Paper Moderately Active In Boston

Fine Paper Business Reported Rather Spotty—Activity In Wrapping Paper and Specialties Increasing—Box Board Market Comparatively Quiet—Paper Stock Is Irregular, With Some Grades Steady and Others Easier

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 8, 1936—The volume of sales of Boston paper houses ranged from fair to good during the last week. At the office of a large company manufacturing fine paper, business was reported as a little spotty. In some quarters activity increased in wrapping paper and specialties. There was no particular change in box board, the market still continuing quiet.

Some grades of paper stock were in fairly steady demand, but in many, business was dull, with a downward trend in prices. For old papers generally there was moderate call. No. 1 hard white shavings declined to 2.00@2.10 from 2.00@2.20, No. 1 soft white shavings to 1.75@1.85 from 1.75@1.90 and No. kraft to 1.05@1.12½ from 1.10@1.15. Mixed papers, however, advanced to .22½@.25 from .20@.25 and print manila to .47½@.50 from .45@.47½.

For bagging and new and old domestic rags, there was not so much demand as for old papers. Domestic manila rope went down to a flat 2.25 from 2.25@2.35, scrap sisal to 1.90@2.00 from 2.00@2.10, paper mill bagging to 1.75@1.85 from 1.75@2.00, and bagging No. 2 to 1.15@1.40 from 1.25@1.50.

In new domestic rags, new white No. 1 shirt cuttings receded to .07½@.07¾ from .07¾@.08 and blue overalls to 5.00@5.50 from 5.50@6.00. Under old domestic rags, twos and blues declined to 1.75@2.00 from 1.75@2.25 No. 1 roofing stock to 1.80@1.90 from 1.90@2.05 and No. 3 roofing stock to 1.20@1.25 from 1.30@1.40. In foreign rags, old fustians went down to 1.85@2.00 from 1.90@2.00 and old linsey garments to 1.90@2.10 from 2.10@2.25.

News of the Industry

The American Writing Paper Company is inaugurating an advertising campaign on Acceptance Bond, a 50 per cent rag content paper, which the concern is introducing to the service houses in Boston and the New England territory. The demonstration unit to be used is "The Letterhead Sketch Kit," which provides the printer with a tool of many uses. It includes 12 basic letterhead designs, each followed by a skeleton design which the printer can use for sketching with pencil, pen, or brush. The letterhead sketches are an aid in selling. They provide for quick color sketches. Time in composition is saved. A substantial saving is accomplished by the elimination of pressroom experiments. The exact position of type matter and the exact colors to match are known. There are no shifting guides and forms, no changing colors and no unnecessary washups. Besides the letterhead designs, the kit includes a swatch of Acceptance Bond in white, white laid, blue, buff, gray, salmon, light green, pink, canary, russet, cherry and goldenrod, in various substances. The kit contains also five Acceptance Bond envelopes in varying sizes, carried in stock by the United States Envelope Company, Springfield, Mass., authorized converter for Eagle-A Envelopes.

Offices and warehouses of members of the Fine Paper Division of the New England Paper Merchants Association are to be closed Saturdays during July and August by a vote taken at a meeting.

It is reported that H. P. Carruth, president of Dill & Collins, Inc., is to become general manager of the Brown Company, whose main office is in Portland, Me., with plants at Berlin and Gorham, N. H. The Brown Company has been operated by a board of directors.

W. E. Penny, president of the Cayuga Linen and Cotton Mills, Auburn, N. Y., manufacturers of the celebrated Cayuga yarns, will be guest of Arthur M. Burr, representative of the company, at the outing of the Boston Paper Trade Association, to be held today at the Charles River Country Club, Newton Centre, Mass. Mr. Penny will pass a few days with Mr. Burr and will interview the trade.

Charles H. Dodge, New England representative of the D. M. Bare Paper Company, Roaring Spring, Penn., left Saturday to visit the company, expecting to be away a week.

Walker Holmes, representative of the Chemical Paper Manufacturing Company, Holyoke, Mass., called on the Boston trade last week. Mr. Holmes is now covering a greatly enlarged territory for his company.

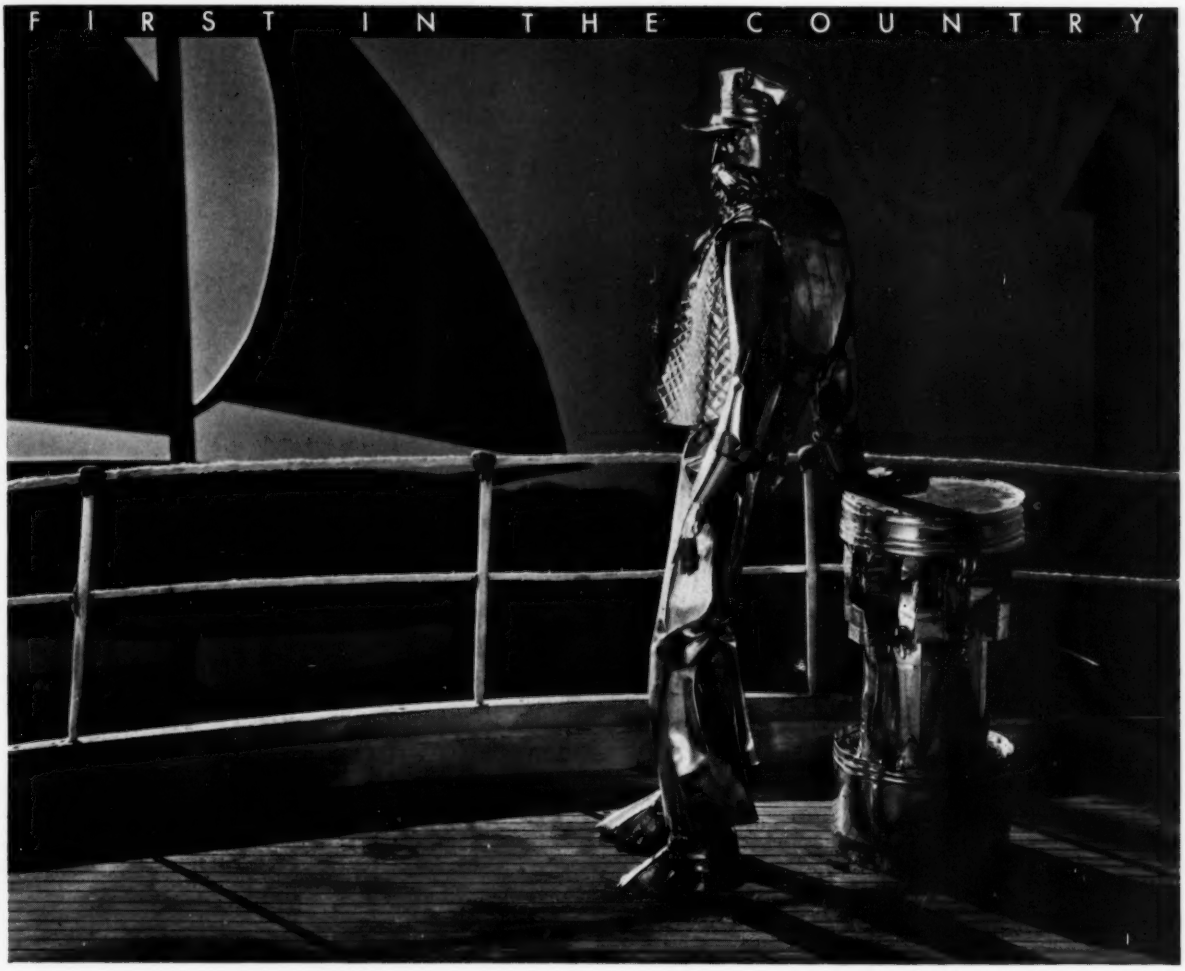
The Beveridge-Marvellum Company, Holyoke, Mass., of which Henry L. Goodman, this city, is a New England representative, has issued Book No. 14 containing a swatch of seven samples of Chatoye, an all-purpose, proxylin treated paper. They are of a permanent brilliance, with color effects obtained from unusual and unique duo-tone treatment. The texture conforms to the requirement of high-speed production. Chatoye will not tarnish, is rubproof, resists moisture, is spoil-proof and may be safely cleaned with a damp cloth.

The Royal Card and Paper Company, manufacturers of Decorative Papers, New York City, of which Henry L. Goodman is a New England representative, has produced Metalique Box Coverings, "delightfully new," shown in a book containing two swatches, recently issued. These coverings have a silver effect in the following patterns: New Star, pearl, checker, wood grain, plaid, lace, holly pine, tweed, star, fern, trellis and stipple. The outside front cover of the book is so made as to represent in part of it a ribbon tied on a box covered with the stipple paper.

Effect of Mineral Fillers on Serviceability of Coating Asphalts

Asphalt shingles and roll roofing are made by impregnating felt with a relatively soft asphalt and then surfacing with an asphalt that is considerably harder, the latter being known as a coating asphalt. In recent years the practice has become general to mix finely ground slate, limestone, and similar mineral fillers with the asphalt to obtain a coating which is less affected by sunlight and less subject to plastic flow.

In an investigation recently completed at the National Bureau of Standards, the weather-resisting properties of a large variety of asphalt-filler mixtures were determined by exposing these mixtures outdoors in various localities and to the accelerated weathering cycle, the latter being an artificial aging test. The tests show that, in general, the durability to weathering of coating asphalt can be considerably improved by the addition of mineral fillers.



SCULPTURED IN TIN BY L. L. BALCOM

UP and down the old Mississippi ranged the hustling packet ships of the last mid-century. Their captains found trade where trade had never been known before... and helped to build a vast inland empire of commerce. Just so in our modern mid-century is EBG building progress where progress was only imagined before. By ranging the frontiers of industry it is continually discovering new uses for that valuable product, Liquid Chlorine; revealing new methods and processes that open up a new empire of industrial activity, new opportunities for profit. In matters pertaining to Liquid Chlorine put your trust in EBG — pioneer producer of the product in America.

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EBG Liquid Chlorine

Historical Sketch of the Development of the Labor Movement of the United States

By John P. Hagenauer[1]

"Life is a continuous adjustment to environment,
And only perfect intuition can bring perfect adjustment."
(Earth—by Townsend)

The history of the development of the labor movement of the United States is a subject of such magnitude that only the briefest outline can be given in the following article:

During the Colonial period in America, no traces of anything like modern trade unions can be found, as there was little need, if any, for organization on the part of labor at that time. Unions of working men usually arise only where there are large and distinct labor classes in industrial centers, and no such centers then existed. The first census, that of 1790, shows but one city in the United States with a population of between 40,000 and 75,000 and no city which could claim a population of 500,000 existed until 1840.

The country was chiefly agricultural and farm labor was performed by independent farmers on their own soil. In the north the hired man had no thought or need for organization, and his isolation would have rendered it almost impossible. He was treated as an individual by his employers, and the abundance of unoccupied land provided an escape from the subordinate position. In the south, until the Civil War, slave labor rendered organization impossible.

Manufacturing, as such, was confined largely to home industry. The raw material for clothing, for example, was spun, woven and converted into garments in the household for its members. Artisans, like carpenters, blacksmiths and shoemakers, worked in their own little shops, and journeymen expected to become independent producers sooner or later.

Artisans and mechanics formed independent bodies exerting pronounced influence on public affairs, but not appearing as organizations pitted against their employers. Their organizations, when they existed, were friendly and benevolent societies, and they were similar in spirit to those formed among master employers. Their main purpose was to take care of members in times of illness or financial distress.

An example of such early organizations, mostly political, is that of the "Caulkers and Ropeworker Hands," mentioned as existing in Boston about 1724. These employee organizations, formed originally by printers, shoemakers, blacksmiths and carpenters, in addition to their benevolent features acted as censors of the quality of work as well as of the morals of their members. Probably, some were legally incorporated; and, if so, this was done with the express stipulation that they should not interfere with wages, hours of labor, or similar economic matters.

Influence of Foreign Competition on Wages

After the close of the Revolutionary War, with the return of peace and the opening of domestic and world markets, there sprang up a class of merchant capitalists that imported cheap goods from Europe or tried to purchase such goods, wherever possible, in the domestic market, acting as middle men for their sale. This group was particularly interested in making as large a profit as possible in their transactions and, therefore, in buying as cheaply as possible. The effect of the imports of cheaper goods in large quantities was immediately felt by the domestic manufacturers who, in turn, were forced to reduce wages to meet this foreign competition. This brought about changes in the relations of the employer and employee. At first the employer and employee united in organizations such as the "Association of Mechanics and Manufacturers," founded in Providence, R. I., in 1789, for the purpose of "promoting industry and giving just encouragement to ingenuity." Similar organizations, formed in Boston and Charleston by the shipwrights and caulkers, offered premiums for inventions and promoted improvement of tools and methods.

In spite of the efforts for self-protection and improvement of methods, the industrial workers realized a steady trend toward lower wages. Gradually, benevolent societies of master employers changed to associations to keep down wages, so that they might secure contracts with the middlemen, the merchant capitalists. Similar labor organizations gave way to trade unions, organized to protect themselves against price cuts resulting in lower wages.

Thus, the shoemakers organized in Philadelphia in 1792, the printers in New York in 1794, and in Baltimore and Philadelphia in the early years of the 19th century, the Boston printers in 1809, and those of New Orleans in 1810.

The gap between employer and employee steadily widened. As early as 1817, New York printers expelled a member who became an employer.

Labor realized early that organization without policy and action is, of course, powerless to bring about results. One by one there begun to develop certain tactics and policies such as:

Collective Bargaining

Negotiations regarding wages and working conditions —carried on between organizations of employers or their representatives, on the one hand, and the chosen representatives of the trade unions, on the other—appeared in the early days of the American labor movement. The first record of anything of this kind is to be found among the Philadelphia shoemakers in 1799. In 1802, the printers of Philadelphia, also the shoemakers of Philadelphia and Pittsburgh, made attempts with this method. In 1809, the New York printers presented their demands to their employers and, after a very courteous correspondence, both parties met and finally agreed upon a compromise scale of wages.

Strikes

A strike represents the action of workmen in quitting their employment in a body, and is a natural corollary of organization and the formulation of demands as to wages and hours.

In 1776, the printers of Philadelphia provided a strike fund and struck against their employers. The year 1799,

[1] Member TAPPI, American Paper and Pulp Association, New York, N. Y.
Note: Mr. Hagenauer was formerly Secretary of the Labor Committee of the Paper Industry Authority and a member of the Management Methods Committee of TAPPI.

shows the skilled shoemakers of Baltimore and Pittsburgh striking for higher wages, in protest against the competition initiated by the cheap labor in Lynn, Mass., a large center of manufacture of cheap shoes.

McMasters, in his "History of the People of the United States," cites what might be called the first modern strike in the City of New York. In 1802, sailors received a wage of $10 per month and desired an increase to $14. They tried to enforce their demand by quitting work, parading the city with a band and compelling others, working for the old wages, to leave their ships to join them. The conspiracy laws then in force permitted the arrest and prosecution of the leaders, and quickly put an end to this first modern strike.

Violations and intimidations occurred occasionally in 1806, during the Philadelphia shoemakers' strike, when "scabs were beaten and employers intimidated by a demonstration in front of their shops or by the breaking of shop windows."

Walking Delegates

The old Benevolent Labor organizations customarily appointed committees to visit, at regular intervals, the various employers, to observe working conditions and the relation existing between employers and employees. These committees convinced themselves through personal observation if conditions were satisfactory or not and reported to their organizations accordingly.

As the number of these establishments grew, it became more and more difficult to make such visits and to find members who were willing to lose time from their work by serving on the committee. Therefore, as early as 1809, the walking delegate made his appearance. In that year the Philadelphia shoemakers substituted, for the committee, a paid representative.

Closed Shop

The expression "closed shop" is of modern origin. The policy, however, appeared as early as 1794, when cordwainers in Philadelphia and elsewhere forced employers to retain only union members in their shops. This request is similar to that made and enforced by the guilds of the middle ages.

The cordwainers of Philadelphia, New York and Pittsburgh required every member of the craft to join the Society when entering these towns. One manufacturer in Philadelphia was forced to move out of the town after fighting the closed shop policy for a year and a half. Employers were even sometimes compelled to pay fees to the union for employing non-union members.

Control over apprenticeship and insistence upon a minimum wage began to make their appearance, originating with the thought that a minimum wage should be set up, for less than which a man should not be permitted to work, while a skilled worker might rise above it if he could.

Employers' Associations

Employers' associations existed early in Colonial days. A definite organization was formed by the master cordmakers in 1789, with the intent to raise prices rather than reduce wages. As unions grew in strength, however, these associations thought to "break them up altogether, root and branch." They advertised for workers out of town, agreed to resist high wage scales; united to appeal to the courts for aid against employees' conspiracy in the "restraint of trade" and concerted wage demands.

Court Action

Disagreements between employer and employee were carried to the courts as early as 1806 in Philadelphia, 1809 in New York, and 1814 in Pittsburgh. During these years four out of six cases were decided against the working men. As an outcome of these long battles, the right of journeymen to combine was recognized; but strikes, boycotts, and attempts to enforce demands continued to be subject to legal action against trade unions.

During this period, labor learned to take a hand in politics, to seek support of partisan leaders, and to appreciate the value of public opinion in times of strikes and prosecutions.

Political Action

The movement for separate political action started in Philadelphia in 1827, during the carpenter strike for a ten-hour day. At that time, the other craft unions in the city came to the aid and assistance of the carpenter union, and as a result there developed a union of unions, the "Mechanics Union of Trade Associations." This is the first step, on record, from unions for common purposes to those for political action. In 1828, this Union nominated candidates and with the aid of the Jacksonian Democratic or Federal party, a large number of them were elected. Philadelphia politics for the next three years had a distinct labor trend. Similar occurrences took place in New York, Boston, Albany and other industrial centers. The "New England Association of Farmers, Mechanics and Other Workmen" about this time blanketed and proposed a nation-wide economic and political movement. Fifteen state local labor parties were formed and at least 50 labor papers founded to give voice to the aims and demands of labor. It is interesting to read, in the light of present-day events and developments, the declaration of faith put out by the Working Men's Republican Political Association of Penn Township in Philadelphia in 1830. It reads as follows:

"There appear to exist two distinct classes, the rich and the poor; the oppressor and the oppressed; those that live by their own labor, and they that live by the labor of others; the aristocratic and the democratic; the despotic and republican who are in direct opposition to one another in their objects and pursuits; the one aspiring to dignified station and offices of power, the other seeking for an equality of state and advantage; the one apparently desirous and determined to keep the people in ignorance of their rights and privileges, that they may live in ease and opulence at the expense of the labor and industry of the others; the other showing that they are acquainted with the nature of their rights and are determined to maintain and possess them; the one seeking to introduce and perpetuate amongst us invidious and artificial distinctions, unnatural and unjust inequalities, while the other party declares that all men are created free and equal, enjoying a perfect uniformity of rights and privileges, and that unnatural and artificial distinctions, independent of merit, are pernicious in their effects and deleterious in their consequences."

The demands of the labor parties included the ten-hour day, restriction of child labor, prohibition of the use of convict labor, free and equal public education, abolition of imprisonment for debt, the exemption of wages and tools for seizure for debt, and the abolition of sweat shops in homes and factories—all of these being an addition to the usual platforms of other parties.

In spite of opposition, mainly from employers, but also in some sections from employees, the demand for a ten-hour day made headway. Outside of Boston it had gradually become the standard day for municipal employees. In that time of 12- and 14-hour working days, the public considered the demand for a shorter day quite radical. Gradually, however, it changed its opinion and considered it as reasonable and proper. President Van Buren ordered the establishment of a ten-hour day for Federal Government workers in 1840.

From early times labor leaders looked upon education as the real hope of the working man for the improvement of his lot. In 1829, the demand for public education headed the list of labor reforms. In 1834, the Convention of Trade Unions, meeting in New York, was urged to consider the "professional monopoly" of education and to demand an "equal universal republican system of education."

In 1835, the next convention demanded the establishment of free libraries in towns and cities "for the use and benefit of mechanics and working men."

In this period of development many radical agitators attached themselves to labor movements. For instance, Thomas Skidmore, a mechanic in New York and a leading radical leader, advocated the selling of all private property at auction and the distribution of the proceeds equally among the members of the community, as well as the common ownership of land.

Frances Wright from Great Britain, advocated women's suffrage and opened her campaign of public speaking on labor questions during this time.

Even the milder demands of the unions, not to mention the other radical schemes, caused a storm of protest throughout the nation and attacks on the heads of labor. They stigmatized the labor leaders with such names as "Levellers," "Mob," "Rabble," "Anarchists" and "Communists," and others of like ilk. In spite of the beneficial effect of many of the efforts on political lines, this first political attempt was of short duration. Beginning in 1827, it had almost disappeared in 1832.

From the year 1832, a gradual return and concentration of labor's efforts to the industrial field, with bargaining regarding hours and wages, is to be observed. The Union of Mechanics of Philadelphia, which started with 50 trade societies, was reduced to four. The experience of Philadelphia, where there was a shift from craft organization to such along ward and county lines, reflects to a large extent the effects in other parts of the country; hence labor leaders, when returning to industrial action, had much of their work to do over.

Efforts To Obtain Low Wage Labor

Industry had grown and with it had come about an influx of insufficiently trained men who were undercutting wages. Women were entering the industrial field. By 1837, there are listed about 100 occupations in which women were engaged, usually for long hours and small wages. Matthew Carey, an economist of that time, estimated that a woman without children could earn $58.50 a year, and one with children $36.40 for the same period. About 15,000 women were employed in the shoe industry of Massachusetts, many earning from a minimum of 8 to 10 cents, to a maximum of 40 and 50 cents per day. In 1831, in six New England states and in New York, Maryland and Virginia, 58.1 per cent of all employees including hand weavers in cotton mills, were women and 7 per cent children under 12.

In 1832, Seth Luther of Providence, R. I., one of the first to advocate labor legislation, stated that manufacturers sent "agents to Europe to induce foreigners to come here to underwork American citizens."

In spite of the handicaps, labor union increased steadily during the '30's. By 1836, Philadelphia had 53 trade unions, Newark and Boston 16 each, Baltimore 23, New York 52, with an estimated membership in Seaboard cities of about 300,000.

In 1835, organization of women was started in Baltimore and in the same year in Philadelphia, New York, and Lynn, Mass.

Hand-in-hand with the increase in local movements there developed the combination of central bodies of unions in a single city, for mutual aid and support.

Nationalization of Trade Unions

At that time the idea of union labels was first conceived, so that it might be possible to recognize goods produced in union shops by union labor.

A premature attempt was made to nationalize the unions, but it was abandoned shortly after by the older leaders until such time as a better groundwork might be laid. As local unions had to precede the union of unions, so national union of all unions of a single craft had to precede the national union of all trade unions. The trend toward centralization was hastened by several factors:

First—The attempt of employers to shift their work from organized to unorganized centers during strikes and high wage demands.

Second—The rapid growth of manufacturing in new centers.

Third—Growth of railway transportation, facilitating correspondence and travel and making national conventions possible even for workers with small means.

During 1835 and 1836, no less than five different craft unions or trades held national conventions. These were the cordwainers, printers, combworkers, carpenters and hand loom weavers.

Corresponding to this increase of participation in employees' unions, we find a strengthening of associations of manufacturers, which became better organized and grew to be equipped with large funds to protect themselves against unions.

Between 1829 and 1842, a renewed systematic effort was made to crush the unions, resulting in at least eight important prosecutions for criminal conspiracy. The union papers of that time are filled with discussions of these cases. These actions and the newspaper comments were the start of another battle in politics.

The year 1837 brought a collapse of the whole financial system of the United States. American credit was shaken to its foundation. Bank and business failures took place in large numbers. Combined with the crop failures this panic brought high prices and untold hardships to the steadily increasing number of unemployed.

The effect of this disaster on the union was instantaneous. With their members out of work, the funds of the unions fell to pieces. Locals, city federations and national craft unions all felt the depression. Few survived; the labor press disappeared; and few records are left to tell the effect of the disaster that befell trade unions.

The unemployment, or over-supply of labor, resulting from the panic of 1837, revealed the old feeling against immigrant labor. In spite of economic distress of the country immigrants totalled 80,847, and by 1837 reached 427,000. This influx naturally alarmed native workers and resulted in 1847 in the formation of a Native American Political Party, which succeeded in electing members to Congress from New York and Pennsylvania, aided therein by the support of labor.

During this period of depression the attention of the unemployed was naturally drawn more and more to the possibilities of independence offered by the public lands in the West. Several leaders advocated division of land among the people and the stoppage of the sale of such land to land companies and stockholders. The idea spread and at last was made a national issue, winning in 1860 the support of the Republican Party and culminating in 1862 in the enactment of the Free Homestead Law.

The influence of the radical German leaders, forced to flee their country after the Revolution of 1848, made itself strongly felt during this period.

An important group of reformers attached themselves to the labor movement. They were the socialist followers of Fourier, the great French leader. Prominent men, like Horace Greeley, Charles A. Dana and Charles G. Whittier, moved by the poverty and misery of the masses, began to embrace these radical theories. Papers were founded, lecturers were sent throughout the country, and Utopian communities were organized, none of them, however, having a long life.

The late 40's saw industry thoroughly revived, the recovery having been hastened by the discovery of gold in California. Manufacturers expanded their establishments and produced supplies in larger quantities than ever before.

Common Labor vs Skilled Mechanics

In response to this trend, the few surviving unions promptly abandoned wage theories. Skilled trades started to secure, through permanent organizations, higher wages and better working conditions for themselves. As a result of these we have the beginning of the separation between common labor and skilled mechanics, destined to raise the latter's wages to new high levels. This separation distinguishes American Trade Unionism from that of any other country in the world.

Rules for apprenticeship, closed shop, minimum wages, time and method of payment, initiation fees, funds for strike benefits, union employment offices and the exclusion of employers, politicians and friends of labor not actually working at the trade, absorbed the interest of the trade unions of this time.

The old locals which survived the panic of 1837 took on renewed life. New locals sprang up as industry expanded. New national unions were founded. The Typographical Union created a national organization, holding a national convention in 1850. 1851 saw the beginning of the Moulders National Union and the National Union of Machinists and Blacksmiths. Stone-cutters entered the field in 1853, and hat finishers in 1854. Efforts were being made to absorb alien workers into the unions, either by drawing them into the existing locals or by establishing foreign language locals to facilitate the transaction of business.

With this development in the growth of unionism, national leaders made their appearance as organizers, writers, and strike directors. The most prominent ones were W. H. Sylvis of the Iron Moulders and Joe Nason Fincher of the Machinists.

The management of the affairs of these far-flung national unions called for steadily increased business ability and high skill.

Between 1850 and the Civil War strikes became much more numerous than ever before. During 1853 and '54, there are said to have taken place not less than 400 strikes, the largest number of which were in New York City. All known crafts were involved in these strikes and practically all industrial centers from New York to San Francisco. The year 1857 brought another industrial panic with its usual effect on the labor world—unemployment, wage reductions, loss of membership in the unions, dissolution of locals, financial weakness and hopelessness among those unions that survived.

Influence of the Civil War

Before the country had a chance to recover from the 1857 depression the Civil War started. Labor was confronted with the fact that it had to take a stand. Before the actual outbreak of hostilities no uniform policy was adopted, but after that time northern labor rallied to the support of the Government.

The effect of the war on industry was felt at once. The demand for war supplies was enormous. Farmers and merchants became prosperous. Labor was again employed, but wages did not keep pace with rapidly rising prices. Industry expanded so rapidly and the number of workers increased so fast that the old unions could not at first keep pace. Labor leaders began to see at once that their efforts must be directed to extend the number of local unions and to enlarge the membership if they were to control the situation. The number of unions increased from 79 in 1863 to 270 in 1864, of which there were 74 in New York State alone. Hand-in-hand with the increase of local unions came an increase of national ones; 1863 to 1866 saw six new national unions—the plasterers, curriers, cigar makers, painters, heaters, and tailors; and four new international unions—ship carpenters and caulkers, coach makers, carpenters and joiners, bricklayers and masons. At the close of the '60's there existed at least 32 national and international trade unions; the international ones had locals in Canada. The total membership is in dispute, but certain estimates place it at about 300,000 members in 1872.

One hundred and twenty-two journals existed, daily, weekly or monthly. *Finchers Trades Review,* edited by the secretary of the National Machinists and Blacksmiths Union, was one of the best of these papers. It advocated trade unionism, shorter hours, and cooperative protection. Leading labor men of the time were W. H. Sylvis from the Moulders' Union, R. F. Trevellick of the Ship Carpenters' and Caulkers' Union, Thomas Phillips of the Shoemakers' Union; also Ira Steward the advocator of the eight-hour day.

The following extract from the *Finchers Trades Review* of March, 1864, is of interest:

"The Slate and Metal Roofers are organizing and it is thought they will demand $3 a day. The Cigar Makers are preparing to secure better wages. The Longshoremen have demanded $2.50 per day of nine hours from the 7th inst. The Jewelers have decided to add 25 per cent to their wages. The Bricklayers demand $2.50 per day, House Carpenters demand $2.50 per day; Painters $2.50 per day, Dry Dock Practical Painters $2.50 per day, Plumbers $2.50 per day, Blue Stone Cutters and Flaggers $2.50 per day. The Piano Forte Makers demand an increase of 25 per cent on former wages. The Iron Moulders ask for 15 per cent advance. The Cabinetmakers and Tailors are also moving. The Carvers ask 15 per cent addition. The Shipwrights are preparing for a struggle. The Brush Makers have been conceded 25 per cent advance in New York by all employers but three. Wheelwrights and Blacksmiths are in council. The Bookbinders are organized. The Coopers have obtained their increase recently sought and will make no immediate demand for a change. The Coach Painters and Coach Trimmers will shortly remodel their list of prices. Several of the trades mentioned above have obtained the wages sought by amicable treaty, and let us hope that all may succeed without the resort of a strike."

Due to the shortage of labor, Congress in 1864 passed an Act authorizing persons to make contracts in foreign countries to import laborers into the United States. Shortly afterward the American Immigrant Company was incorporated in Connecticut. The Company was composed of bankers, employers and politicians and was endorsed by the Governors, Senators, etc. Labor was confronted with an increasing flow of immigrant labor.

Labor Cooperatives and Banks

The years 1866 to 1872 witnessed a renewed attempt to organize a National Labor Union, similar to the attempt made 30 years before. The time seemed ripe for

such an undertaking. In most cities there existed city trade assemblies representing all organized craft. In 1864 an attempt was made to federate these city trade assemblies by calling a national assembly. The main object of the national body was to abolish strikes and to substitute trade agreements with employers. This federation did not represent strict craft unionism and did not concentrate its effort to the promotion of this type of union. It tried to free labor from the control of capital by means of cooperative shops in which labor provided its own capital and shared in the profits. Many such Cooperatives were founded but all were short-lived.

As a result of these cooperative efforts the national labor union became interested in banking, in currency, and entered into relations with agrarian groups. At the convention in 1868 women delegates first appeared, and prominent suffragettes were present as representatives of the Working Women's Protective Association. About the same time the negro workers were trying to form their own national association at Washington, and the National Labor Union decided to encourage their efforts by sending a special delegate to their convention. This negro organization asserted its demand for equal rights with white working men; endorsed the eight-hour day; and, in addition, petitioned Congress for the exclusion of coolie labor and for a Homestead Act giving land to the negroes in the South. Since this group was closely allied to the Republican Party, however, no close alliance with the national labor union—then considered a radical and independent body—was sought.

California unionists gave special attention to the Chinese question, and their efforts resulted in the Chinese Exclusion Act of 1882. The activities of the National Union hastened the establishment of a Government Bureau of Labor in 1884, which expanded into the Department of Labor in 1913.

Among other reasons, the failure of cooperative shops and the disregarding of strict trade unionism with its broader aims resulted in the downfall of this second attempt at a general national union, which failed to function by 1872.

The leaders of the four largest national craft unions (iron moulders, machinists, coopers, and typographers) realized that nationalization must be developed along new and different lines. In 1873 an invitation for a convention was issued by them to all protective labor organizations. At this convention, a new federation was proposed which was to avoid all political issues and to concentrate its efforts along purely industrial lines. It was to be known as the Industrial Brotherhood. The panic of 1873—bringing in its train a six-year period of industrial distress, strikes, labor disorders and disasters to unionism—coincided with the beginning of this organization. Drastic wage cuts and widespread unemployment made a successful national organization impossible. In seven years the number of effective national craft unions was reduced from about 30 to 8 or 9, and even the remaining ones were in financial difficulties. The period from 1872 to 1881 can well be termed one of violence and chaos.

All other means having failed, naturally the leaders again sought relief in political action. Working-men's parties began to appear, mostly socialistic in character. Secret societies took the place of open unions. Propaganda spread through industrial centers. Farmers and laborers joined hands in political action. Many labor leaders abandoned unionism entirely and sought political action only.

Reorganization in the Seventies

The decade of the '70's closed with trade unionism demoralized in organization as well as in spirit. With the return of industrial prosperity labor sought an opportunity to share it to a much larger extent, through union organizations, and to combat the still increasing influx of unskilled and immigrant labor. Men like Adolph Strasser and Samuel Gompers, with a businesslike and practical outlook, realized that a national organization must have complete control over locals, membership dues sufficiently high to permit building up of large membership funds, and a benefit system to tide the union over industrial depressions. A period of reorganization set in. During this period the following national trade unions existed;

Typographical, formed in 1850; Hat Finishers, 1854; Iron Moulders, 1850; Locomotive Engineers, 1863; Cigar Makers, 1864; Bricklayers and Masons, 1865; Silk and Fur Hat Finishers, 1866; Railway Conductors, 1868; Coopers, 1870; German Typographia, 1873; Locomotive Firemen, 1873; Horseshoers, 1874; Furniture Workers, 1873; Iron and Steel Workers, 1876; Granite Cutters, 1877; Lake Seamen, 1878; Cotton Mill Spinners, 1878; New England Boot and Shoe Lasters, 1879.

The year 1882 saw the birth of Labor Day. A delegate to a session of the Central Labor Union of New York City moved that "a day should be set aside as a festive day during which a parade through the streets of the city would permit a public tribute to American industry."

On September 5 of that year 20,000 to 30,000 workers marched through Manhattan and a similar celebration occurred in the following year. In 1884 the Knights of Labor adopted a resolution declaring the first Monday in September to be Labor Day. In 1887 New York and several other states made it a legal holiday; others soon followed suit. In 1894 Congress declared it a legal holiday in the District of Columbia and for Federal workers throughout the country. It is now also a holiday in Canada.

American Federation of Labor Organized

Beginning with 1881 a series of conventions and conferences gradually led to the formation of the American Federation of Labor, in December 1886, at Columbus, Ohio.

Samuel Gompers was elected president, which office he held until his death in 1924, with the exception of one year. He advocated and insisted upon the national craft or trade union as a basis of the organization and upon sound financial policies. In the course of a few years after the formation of the Federation, very definite lines of policy were formed, such as the avoidance of radical economic theories, the eight-hour day, and cooperation with the National Civic Federation and the Trade Agreement.

Organized in 1886, with an estimated membership of 150,000, the organization increased in growth to a total of 349,422 in 1899. Rapid increases in membership came with the beginning of the 20th century, showing 4,078,740 in 1920, 2,933,545 in 1929, and approximately 2,608,011 in 1934. These figures represent paid-up memberships in the American Federation of Labor and are based on the annual report of the Federation for October 1934. August 1935 showed a paid-up membership of 3,153,913 or an increase of 545,902 over the average for the 12 months of 1935. Estimates by the American Federation of Labor indicate a total strength for September 1934 of approximately 5,650,000, inclusive of members in arrears. The statement is also made that the total number of workers who look to the A. F. O. L. as their representative agency is not less than 12,000,000.

The scope of the American Federation of Labor includes Canada and the insular possessions of the United

States. The basis, as indicated previously, is a national or international union, the latter term being used on account of Canadian provinces. City, central bodies, state federations, local federations, and local unions, not organized on a national basis, are admitted to affiliation.

The national or international unions hold their charters from the American Federation of Labor and they, in turn, issue charters to their locals.

According to the annual report of 1934, the American Federation of Labor consisted of 109 national or international unions and 1,788 affiliated local trade or federal unions, with a grand total of 32,684 locals.

Besides the American Federation of Labor there are four great Brotherhoods of Railway Men. These were founded as benevolent Associations, as it was difficult for railway men to secure acceptance by insurance companies on account of the hazardous nature of their work. With a combined membership of about 500,000 they are a powerful factor within organized labor.

In 1914 as the result of disagreements within the ranks of the united garment workers, there appeared a strong organization known as the Amalgamated Garment Workers, with a membership of about 150,000 in 1920.

The 18 years from 1886 to 1914 saw the development and growth of the organization of female labor, which growth was strongly affected by the influence of socialism.

Since the early 70's, strong groups of labor leaders have opposed separate craft and trade unions and have advocated the formation of one grand union for all workers as equal and alike in their interests. A number of industrial unions were founded, the "Knights of Labor" being one of these.

In 1905, the Industrial Workers of the World were organized in Chicago through the merger of the Western Labor union (1898) and the Socialists Labor Party and other smaller radical groups. All of these organizations had been antagonistic toward the American Federation of Labor as being too exclusive, confined to skilled workers, and as accepting the capitalistic system and trade agreement as final; furthermore, its scheme of organization and tactics were objectionable to the radical "industrial democrats." Its membership was estimated as 30,000 in 1929.

Labor Organizations During the World War

With the outbreak of the World War in 1914, European demands for war materials, etc., gave great impetus to American industry. Demand for food stuffs and manufactured commodities became enormous and with it an increasing demand for labor. Immigration of foreign labor was practically at a standstill. The return of men to their native countries for war service was felt by industry. Labor called for higher and higher wages to meet the rising cost of living. Trade union memberships grew rapidly as heretofore and the strength of organized labor increased with prosperity.

The American Federation of Labor considered the war as its own economic struggle. On March 12, 1917, organized labor accepted the war wholeheartedly, and together with pro-war socialists, formed, in the summer of 1917, the American Alliance for Labor and Democracy. The Federal Government appreciated the stand taken by organized labor and placed representatives in important positions, on committees and advisory boards. As a result of this cooperation, there was created in April 1918, the National Labor Board to Adjust disputes, and the War Labor Policies Board in June 1918 to determine principles which should govern relations between capital and labor.

The shortage of male labor resulted in the substitution of women, mainly in machine shops, ammunition plants, automobile factories, repair shops and foundries. In January 1918, 1,266,000 women had replaced men in making war supplies.

In spite of the acceptance of the war and Labor's share in the administration, strikes were numerous. According to the report of the American Federation of Labor, there were 1,515 strikes in 1918 involving 234,466 workers and costing $1,474,380. Among the more serious disturbances was the brief strike of the Railway Brotherhoods in March 1917 as a protest against delays in applying the Adamson eight hour law, the strike of the International Union of Mine, Mill and Smelter Workers in Arizona, and the I.W.W. strike in Washington and Oregon lumber regions in July and August 1917.

The peace Conference in 1919, recognizing the importance of the labor question and its influence on international affairs, established the so-called International Labor Conference. The following excerpt of the preamble of the draft convention is of deep significance as it shows the first world recognition of labor movements and labor claims.

"Whereas, The League of Nations has for its objects the establishment of universal peace, and such a peace can be established only if it is based upon social justice; and

"Whereas, conditions of labor exist involving such injustice, hardship and privation to large numbers of people as to produce unrest so great that the peace and harmony of the world are imperiled; and an improvement of these conditions is urgently required; as, for example, by the regulation of the hours of work, including the establishment of a maximum working day and week, the regulation of the labor supply, the prevention of unemployment, the provision of an adequate living wage, the protection of the worker against sickness, disease and injury arising out of his employment, the protection of children, young persons and women, provision for old age and injury, protection of the interests of workers when employed in countries other than their own, recognition of the principle of freedom of association, the organization of technical and vocational education and other measures;

"Whereas, Also, the failure of any nation to adopt humane conditions of labor is an obstacle in the way of other nations which desire to improve the conditions in their own countries."

Recent Developments

The first session of the International Labor Conference was held in October, 1919 in Washington, D. C. Women were not represented at the conference but the National Women's Trade Union League held a conference at the same time at which 12 countries were represented. This international working women's conference tremendously encouraged the economic organization of women in this country.

Based on European influence, the high cost of living, court details growing out of the use of injunctions, the failure of the steel strike (1919-20), free speech interference and other forces, induced labor to have recourse to political endeavors again. In 1919 a National American Labor Party was launched. Several important farm organizations joined their efforts with those of labor adding another page to the history of farm labor alliances in the United States. This party was quite active during the presidential campaign of 1920, but its last conference was held in 1923. Notwithstanding the failure of separate labor parties, the influence of union labor on politics is an enormous and powerful one and one that makes itself felt throughout the country.

After having reached the peak in membership in 1920, union membership steadily declined, reaching its lowest

point in 1933. With the beginning of the New Deal legislation, an upward trend set in resulting in a steady growth today.

In all essential principles there is a unit of purpose in the ranks of organized labor but not a unit of method. Even within the ranks of the American Federation of Labor, the question of industrial (straight line) versus craft unions is becoming more and more important.

The industrial unions cover all workers within a given industry without regard to their craft or occupation, as, for instance, coal miners, oil field workers, clothing workers. They deal with an industry as a whole, reasoning that as each industry is becoming more and more of a unit so must labor within the industry be organized as an integrated unit.

The craft unions, on the other hand, cover similar workers in many industries, such as machinists, carpenters, electricians, foundrymen, etc.

The most influential labor leaders seem to favor industry unions, and the trend for such unions is very pronounced in several industries, notably steel, automobile and oil.

There is, in the present day, a growing sentiment for renewed political action, possibly for a labor party, not at once, but more than likely in the not too distant future.

Unions in the Pulp and Paper Industry

The paper and pulp industry deals mostly with two separate unions. Both of them are semi-industrial, taking in both skilled and unskilled labor—both are affiliated with the American Federation of Labor.

The International Brotherhood of Paper Makers was organized in 1893 at Holyoke, Mass. It originated with the Social Club of Paper Machine Tenders formed in 1884 and gradually developed into a national union, receiving a charter in 1893 as the United Brotherhood of Paper Makers, and the cessation movement by the pulp and sulphite workers in 1906 resulted in the organization of a separate union seriously reducing the membership of the parent organization.

After several years of struggle, an agreement was reached between the two Unions in 1909, and the United Brotherhood was rechartered as the International Brotherhood of Paper Makers with reduced jurisdiction.

The following is based upon the 1929 Edition of the Handbook of American Trade Unions:

INTERNATIONAL BROTHERHOOD OF PAPER MAKERS

Since its organization in 1909 this organization, in a general way covers only the skilled workers in the machine and beater rooms and subsequent processes.

Objects The objects of this organization are to raise our trade from the low level to which it has fallen and by mutual effort to place ourselves upon a foundation strong enough to resist further encroachments* * * to assist each other to secure employment; to reduce the hours of labor and to secure adequate pay for our work and by every means to elevate the moral, mental and social conditions of our workers.

Territorial jurisdiction United States, Canada, and Newfoundland.

Trade jurisdiction All machine-room help and beater engineers except swipers and sweepers in paper mills making news, bag, and hanging papers. In all other paper mills except those making news, bag, and hanging paper, its jurisdiction shall include all machine-room help (except swipers and sweepers) and beater engineers, helpers on beaters, cutters and finishers, calendar men and rotary men, and their helpers.

Government—1. Executive board, composed of the president, secretary, six vice presidents, and treasurer, shall have general supervision over the international and subordinate locals.

2. Local unions: Subordinate; constitution and general laws determined by international.

3. Initiative and referendum: Election of general officers by referendum; constitutional amendments and initiated legislation by referendum.

4. Convention: Held biennially.

Qualifications for membership Any person actually employed within the jurisdiction of the union is eligible to membership. Male and female membership.

Apprenticeship None.

Agreements Negotiated by international officers to cover the industry, but are signed by individual employers.

Benefits Strike; death.

Official organ The Paper Maker's Journal

Headquarters Albany, N. Y.

For the year 1929 the Handbook lists a grand total of United States and Canadian Locals of 84. This number now probably exceeds 180 Locals since 53 were added in 1933 and 41 in 1934. Figures for 1935 are not available, neither are the increases from 1929 to 1933.

The membership given by the Handbook for 1929 was 6,000. The present one is probably nearer to 18,000 which has been estimated from the voting strength, as actual figures are not available.

THE INTERNATIONAL BROTHERHOOD OF PULP, SULPHITE AND PAPER MILL WORKERS

Originally organized at Burlington, Vt. on January 6, 1906. It remained an independent organization until 1909 when an agreement on jurisdiction was reached with the Paper Makers and the pulp and sulphite men joined the American Federation of Labor.

Objects The object of this union shall be to secure and maintain a living wage and lessen the hours of labor for its members; to assist each other in obtaining employment in preference to persons not connected with the union; and to use every honorable method to elevate its membership in the economic, moral, and social scale of life.

Territorial jurisdiction United States, Canada, and Newfoundland.

Trade jurisdiction All branches of the pulp and paper making trade excepting machine-room help and boss beater men in news, bag, and hanging mills. In other mills than the class mentioned this organization does not have jurisdiction over the beater-room or finishing-room help.

By the term "pulp-making and paper-making trade" is meant all grinder men, wood loaders, both inside and outside the mill; all screen men, floor sweepers, oilers, press tenders, decker men, wet-machine tenders, digester cooks, and all the help employed in and around the same; acid-making plants; all shippers, finishers, both roll and bundle, swipers; all men employed in and around any soda mill, blow-pit men, and all men employed in and around any ground-wood, sulphite, and soda mills doing repairs, except such as are recognized as mechanics, molders, and carpenters, who shall belong to their own union if one exists in the city or town, otherwise they shall be admitted as members of this union; beater men; all female help employed in and around the mills; rope cutters and rotary men; clay mixers, wood-boat unloaders, and talc men, and all men employed in the handling of wood, sulphur, clay, vitriol or any other article, which is necessary in the making of any kind of pulp or any kind of paper; teamsters in and around the mills drawing supplies to and from any of the above-mentioned mills or working in any capacity directly connected with the mills or the making of any kind of paper and pulp; screen-plate men and their

helpers and pipers; stem firemen and engineers, subject to agreement with their international unions.

Government—1. The international union reserves the right to fix, regulate, and determine all matters pertaining to membership in all branches of the pulp and paper making trade over which it has jurisdiction, while to subordinate unions is conceded the right to make all necessary laws for local government, provided such laws do not conflict with the laws of the international union.

The executive board composed of the president, secretary, six vice presidents, and treasurer, shall have the entire management of this organization and shall be held responsible for the efficient management of the same. At least one member of the executive board shall be a resident of Canada.

2. Local unions: Every local shall have the right to make by-laws to govern the actions of its own members, provided they do not conflict with international constitution and by-laws, and they must be approved by the international.

3. Convention: No fixed time for convention. Elect officers and legislate for organization. Constitution amendments by convention only.

Qualifications for membership Any man, woman, boy, or foreman employed in or around any pulp, paper, or soda mill, and all employees of paper-bag, box, and envelope factories * * * as well as paper handlers wherever employed, are eligible to membership.

Agreements A wage-scale conference is held by international officers and committees representing local unions. After wage scale is adopted, the international officers enter into negotiations with the employers, either individually or in association. Agreements are, however, signed by individual companies.

Benefits Strike.

Official Organ Pulp, Sulphite, and Paper Mill Workers' Journal.

Headquarters Fort Edward, N. Y.

Organization Local unions exist in the United States and Canada. Their exact number is not available. The membership was given for 1929 at 10,000 and is estimated from the voting strength to be around 14,000 for 1935.

Newsprint Production Increases

Production of newsprint in Canada during April, 1936 amounted to 258,721 tons and shipments to 267,296 tons, according to the Newsprint Service Bureau. Production in the United States was 76,470 tons and shipments 77,546 tons, making a total United States and Canadian newsprint production of 335,191 tons and shipments of 344,842 tons. During April, 25,224 tons of newsprint were made in Newfoundland, so that the total North American production for the month amounted to 360,415 tons. Total production in April, 1935 was 324,511 tons.

The Canadian mills produced 140,585 tons more in the first four months of 1936 than in the first four months of 1935, which was an increase of seventeen and four tenths percent. The output in the United States was 5,724 tons or one and nine tenths percent more than for the first four months of 1935, in Newfoundland 7,678 tons or seven percent less, and in Mexico 6,967 tons less, making a net increase of 131,664 tons, or ten and eight tenths percent.

Stocks of newsprint paper at Canadian mills were reported at 85,629 tons at the end of April and at United States mills 17,087 tons, making a combined total of 102,716 tons compared with 112,367 tons on March 31, 1936. There was still considerable tonnage waiting later water shipment.

Vulcalock Process Not an Infringement

The Circuit Court of Appeals recently affirmed the decision of the District Court of the United States for the Western District of Wisconsin regarding a rubber covered roll which is being used for marking and striping paper on paper making machines. The American Lakes Paper Company brought suit against the Nekoosa-Edwards Paper Company, a manufacturer of decorative wrapping paper, and The B. F. Goodrich Company, the maker of the marking roll, intervened and assumed the defense of the suit for its customer.

In this decision, it was held that The B. F. Goodrich Company's rubber covered roll, made by the Vulcalock process, was not an infringement on the Seaborne Patent No. 1,517,018.

The use of the Vulcalock rubber covered marking roll, it is said, especially in the striping or other decorative marking of wrapping paper, produces not only a much better stripe or mark on the sheet but also at a much lower cost than is possible to do with the striping felt. The growing demand for striped and marked wrapping papers has provided a real field for an improved marking roll. Now that such a roll is available without risk of infringement, it is anticipated that the production of marked paper will be greatly stimulated throughout the industry.

The B. F. Goodrich Company's development and manufacture of the Vulcalock roll covering, which eliminates the hard rubber base and permits a direct bond of the cushion rubber to the metal core, has not only made possible the marking roll but a complete line of Vulcalock press rolls, couch rolls, felt carrying rolls, wire rolls and table rolls as well as miscellaneous roll coverings used in the paper and other industries.

This direct bonding of rubber to metal by the Vulcalock process has not only played an important part in the field of roll coverings but also has made possible the rubber lining of pipe, tanks, and rubber covering and lining of various metal parts for protecting the metal against corrosion, chemicals and abrasives.

German Paper Products Increase in 1935

German exports of paper and paper products showed appreciable improvement during 1935, according to a report from Consul A. W. Klieforth, Cologne, made public by the Commerce Department.

Shipments abroad from Germany of such items during the year amounted to 373,752 metric tons, valued at 146,870,000 reichsmarks ($58,740,000) compared with 290,548 tons valued at 132,632,000 reichsmarks ($53,000,000) in 1934, a volume increase of 29 per cent and a value increase of 11 per cent. The relatively smaller gain in value, the report points out, indicates, to a certain degree, evidence of a policy of expanding business without regard to satisfactory prices. On the other hand, the increase in exports was chiefly in overseas markets which, in general, are not outlets for high-grade products.

A substantial part of the increased paper export trade in 1935, the report states, was undoubtedly due to barter transactions, particularly in India, China, Australia and the principal South American markets. Shipments to European markets registered a general decline. Exports to the United Kingdom, by far the outstanding customer for German paper products, decreased from 78,202 metric tons, valued at 23,160,000 reichsmarks ($9,250,000) to 72,609 tons, valued at 23,117,000 reichsmarks ($9,245,000) in 1935. Increases were recorded in the case of Austria, Sweden, Spain and Czechoslovakia.

Obituary

Edward Dummer

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 8, 1936—Edward Dummer, for many years a mechanical expert on paper feeders as well as a patent solicitor and inventor, died June 2 at his residence, 1798 Washington avenue, Auburndale, Mass., in his ninety-sixth year. He was the fourth oldest graduate of Yale College, a member of the class of 1865.

Born in Lowell, Mass., in 1841, he was a son of John Dummer, widely known maker of water wheels. He came to Boston in 1872.

He leaves a son, Edward L. Dummer, of Wellesley, Mass., and a daughter, Carlotta R. Dummer, with whom he made his home.

Funeral services were held from the home June 5. Burial was in the family plot in Lowell Cemetery.

Joseph Tuzzo

Joseph Tuzzo, well-known Hoboken paper stock dealer, died last week in Christ Hospital after a brief illness. He had undergone an operation for a ruptured appendix. Pneumonia developed and caused his death.

He was 31 years old a son of Margaret and the late Peter Tuzzo, founder of the paper stock business. He was educated in Public School No. 9 and Demarest High School.

Surviving are his mother, his widow, Elizabeth Morano Tuzzo; two sons, Peter and Joseph Jr.; three brothers, Michael, Peter and James, and five sisters, Mildred, Rosalyn, Josephine, Marie and Catherine.

He was a member of the Holy Name Society of St. Francis parish.

William A. Loehning

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 8, 1936—William A. Loehning foreman of the finishing department of the Neenah Paper Company, Neenah, Wis., died June 3 at his home. He had been employed by the company for 43 years, and was 67 years old. Burial took place at Neenah.

Indianapolis Demand Less Active

[FROM OUR REGULAR CORRESPONDENT]

Indianapolis, Ind., June 8, 1936—Some few branches of the paper business appeared to develop dullness during the last week. Most of the trade continued on a fair volume and in those items where demand fell away it was predicted that the situation was but temporary. Chief in this line was a reported lessened demand for paper from the envelope factories. Just why production with these plants should fall down was a matter of conjecture, but plant executives said there had been a slight decline in demand from some of their customers who usually are affected by seasonal changes.

Demand for summer specialties broke last week with a bang. So far as the city itself is concerned, it started the week before Memorial Day because of the annual Speedway races, but from all parts of the state now demand is reported improving rapidly. The state has just experienced its first real warm weather and last week saw a big demand for picnic items, including towels and like articles. This demand is expected to continue good during the season. Most dealers had stocked up fairly heavy in anticipation of warm weather and thus far the reorder files of the jobbers are not overloaded, but more active buying is expected this week. Toilet demand also has shown some improvement.

Fine paper demand has begun to feel the usual summer dullness. With graduations over and the wedding season well along, there has been a slump in the usual items sold during most of the last two months for these functions. Bonds and covers also have shown some decline, but the dullness is not so marked. Prices are holding firm, however.

Building paper demand is breaking all records for any year since the depression began. All sorts of paper used for building have been helped and jobbers in some instances have had some difficulty in securing shipments. Roll roofing seems to be particularly wanted in the agricultural districts. Prices show a continuous increase over those in all lines last year.

Demand for paper stock and rags is not heavy, but some mills are taking good qualities of both. Bidding prices are considerably lower than the local trade believes justifiable.

Lawrence Acid Pumps

Pumps designed specifically for long service handling acids, alkalis, brine, hot or cold water, and other corrosive fluids are described in a recent bulletin issued by the Lawrence Pump and Engine Company.

These "VS" type pumps are notable in the amount of variation in construction that is provided for different needs. Impellers come either open or enclosed; glands for either grease or water sealing; and these pumps are frequently built either entirely, or else with all moving parts made of the particular alloy which will stand up best under the particular conditions to be met. The makers of these pumps also call attention to the extra deep stuffing box, and other features.

This bulletin, giving performance tables, dimensions, parts, etc. may be obtained by writing to the Lawrence Pump and Engine Company, Post Office Box 70, Lawrence, Mass., for the type "VS" Vortex Single stage pump bulletin.

An Invitation from Crane Co.

The Crane Company extends a cordial invitation to the members of the American Pulp and Paper Mill Superintendents' Association to stop in Chicago either on the way to Grand Rapids for the convention or on the way home. Tom Ireland, Crane's representative in charge of pulp and paper activities, will be glad to welcome you at any time. If you would be interested in making a tour through the mammoth Chicago plant of Crane Company, see Tom at the convention and he will be glad to make arrangements for you. Crane Company will provide suitable entertainment for the ladies who may accompany the superintendents to Chicago at the time of their visit to the plant.

New Board for Bathurst

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., June 8, 1936—Following the taking over of the control of the Bathurst Power and Paper Company, Ltd., by Nesbitt Thomson & Co., Ltd., and Associates, an adjoined annual meeting was held in Montreal at which the following were elected to the board of directors: A. J. Nesbitt, P. A. Thomson, J. B. Woodyatt, F. J. Campbell, H. P. Robinson, of Saint John, M. A. Thomson, and D. K. Baldwin.

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FUTURE MEETINGS

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY, Summer International Meeting in Canada, August 3 to 7, Montreal, Quebec, The Saguenay. Details may be obtained from the secretary, R. G. Macdonald, 122 East 42nd street, New York.

NEW ENGLAND SECTION, Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Nonotuck Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION, Technical Association of the Pulp and Paper Industry—fourth Friday of each month at the Engineers Club, Philadelphia, Pa.

KALAMAZOO VALLEY SECTION, Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park-American Hotel, Kalamazoo, Mich.

AMERICAN PULP AND PAPER MILL SUPERINTENDENTS' ASSOCIATION, Annual convention, Grand Rapids, Mich., June 24-26, 1936.

A PAPERMAKING PILGRIMAGE TO JAPAN, KOREA AND CHINA

A book which is the most comprehensive survey and record of Oriental papers and papermaking (and likely long to remain so) is Dard Hunter's new work "A Papermaking Pilgrimage to Japan, Korea, and China," says Harrison Elliott, himself an expert on Oriental papers.

The native papers of the Orient afford a most interesting study in their method of production, variety, and those peculiar properties which are not duplicated by papers made in the Occident. It has remained for Dard Hunter to embody in book form with text, illustrations and actual specimens of these papers, this most exhaustive research and study ever attempted.

The term "pilgrimage" hardly does justice to the travel involved and the preliminaries necessary to obtain first-hand and authoritative information in remote papermaking centers and districts where the stranger is not particularly welcome, and in those small mills which guard their operations with secrecy. Years were spent in preparing and paving the way for this thorough and painstaking inquiry into Oriental papermaking methods and their varied product.

The fifty specimens of fine and rare Oriental papers exhibited in this book are about as interesting a collection as it is possible to assemble, and are excellent examples of curious variety in color, texture, fiber formation and surface. The specimens vary from filmy tissues to the substantial Japanese Vellum in its finest and most beautiful texture. The collecting of these specimens was in itself no mean task. Each paper has a special reference in the text and an explanatory note telling of the paper's history, where it is made, and the native use for which it is intended.

There are sixty-five illustrations in photogravure, reproductions from photographs, and are of special interest in their portrayal of technique and papermaking scenes. The frontispiece is a reproduction of a kakemono with an imaginary portrait of Ts'ai Lun to whom, in the absence of better evidence, is attributed the invention of paper. There are also three excellent wood-cut illustrations by J. J. Lankes of the principal papermaking plants the inner bark of which yields the finest fibres used in native papermaking. These plants are the Paper Mulberry, Mitsumata and Gampi. Other illustrations are of native papermakers at their work, papermaking shrines and the first picture ever taken of the School of Papermaking by Hand in Korea.

In these illustrations one is impressed by the fact that although the larger mills have much in the way of mechanical equipment for the preparation of the raw material and the finishing of the paper, yet in the actual formation of the sheet a hand mould is necessary owing to the peculiar characteristics of the fibers. Of course in the remote, small mills they still adhere to primitive methods in the preparation of the pulp and in drying and finishing.

In the introduction Hunter relates much of his travel experiences, the life and local color of the countries visited, also gives an idea of the extent to which paper enters the lives of the natives and their economy in the use of this important commodity.

In physical appearance the book is a distinguished example of bookmaking and follows the precedent established by the previous Hunter books. The dress of the book is well in accord with the nature and importance of the contents and their permanent value. The illustrations in photogravure are on Japanese Vellum which imparts a rich artistic tone and a pleasing clearness of detail. The text is handset Monotype Baskerville flawlessly printed by the Pynson Printers on Shogun, a native Japanese handmade paper. The typography is a splendid example of the work of Elmer Adler and leaves nothing to be desired in that respect.

An important detail of the physical make-up of the book was the binding problem which it entailed owing to the necessity of inserting so many paper specimens of varying bulks and textures. This part of the book's production was entrusted to the Gerlach Hand Bindery and was ably and neatly handled.

The cover bears an all-over design made from 18th century North Korean wood-blocks from the Hunter Collection, and is printed in red and gold on a black background. The book is well protected from ordinary wear by a substantial slip case.

This work makes a fitting companion volume to Hunt-

er's previous book "Old Papermaking in China and Japan" which treats of ancient methods of papermaking in the Orient and has many inserts of rare old papers by the way of illustration. The peculiar conditions under which the illustrative material for a book like this is collected make it necessary to limit it in number. In this instance the edition is limited to 376 signed copies.

American Writing Reorganization

BOSTON, Mass., June 5, 1936—Two steps in furtherance of the plan of reorganization of American Writing Paper Company, Inc., will come before the United States District Court here for approval on June 18, according to a notice issued by the company today. The first involves the sale of the properties comprising the Holyoke and Dickinson divisions of the company and the second an agreement of compromise between the company and the Holyoke Water Power Company, the aggregate claims of which as listed in the plan amount to approximately $300,000.

The company has received a firm bid of $55,000 each for the Holyoke and Dickinson properties, comprising the land, mill buildings, water powers, steam plants and water wheels, but excluding the paper making machinery. Disposal of the properties is subject to court approval of the bid or of other bids which may be presented at the hearing. Sale of the properties will provide immediate relief from fixed charges, the proceeds of the sale being held under the first mortgage pending consummation of the plan and then becoming available as part of the cash requirements for carrying it into effect.

The company reported that it had been unable to acquaint many holders of its 6 per cent bonds, due in 1947, with its plan of reorganization, and asked that they communicate with the company. On June 25, 1934, the company filed a petition under Section 77B of the Bankruptcy Act.

Sandy Hill Reopens Foundry

[FROM OUR REGULAR CORRESPONDENT]

HUDSON FALLS, N. Y., June 8, 1936—The Sandy Hill Iron and Brass Works, Inc., has resumed operations in its foundry after having been closed since last fall and the outlook for the remainder of the year is considered good. An order for the manufacture of a paper machine has been received which is the first received since the present management assumed charge and prospects for additional orders are bright. Inquiries regarding products manufactured by the company are being received daily and it is probable that many new workers will be taken on if business continues to show improvement. The order for the paper machine was obtained by Paul P. Hilton, who recently entered the employ of the company as a salesman. He was formerly with the Johns Mansville Company and the Scott Tissue Company. Under the new management a strong sales force with O. J. Mills as sales manager is being built up. In addition to Mr. Milton other new salesmen with the concern include J. Wesley Joslyn, of South Lee, Mass., Daniel Donnelly, of South Bend, Ind., and Allen A. Low, of Glens Falls. Mr. Joslyn, a former paper mill engineer, was formerly associated with the old Colony Envelope Company of Westfield, Mass., and plant manager of the Hurlbut Paper Company, of South Lee. Mr. Donnelly was associated with the Beavis Machine Company, of Middletown, Ohio, while Mr. Low was formerly with the Laurentide Limited Paper Company of Grand Mere, P. Q., Canada.

Production Ratio Report

These statistics are based upon paper production reports to the American Paper and Pulp Association.

COMPARATIVE MONTHLY SUMMARIES

Month	1936	1935	1934
January	76.1%	65.8%	.....
February	77.9%	70.0%	.....
March	76.0%	70.5%	.....
April	82.5%	70.0%	.....
May	.....	69.4%	.....
June	.....	72.3%	.....
July (b)	.....	67.8%	.....
August	.....	70.9%	.....
September (c)	.....	75.0%	59.4%
October	.....	75.6%	64.7%
November	.....	75.3%	61.7%
December (a)	.....	74.3%	62.1%
Year	.....	71.2%	.....

COMPARATIVE WEEKLY SUMMARIES

CURRENT WEEKS, 1936		CORRESPONDING WEEKS, 1935	
*May 9	81.6%	May 11	69.1%
*May 16	82.1%	May 18	70.7%
*May 23	82.6%	May 25	68.4%
*May 30	77.3%	June 1	68.9%

The following statistics show the number of mills reporting by ratio groups:

	Number of Mills Reporting, Current Weeks			
Ratio Limits	May 9, 1936	May 16, 1936	May 23, 1936	May 30, 1936
0% to 50%	76	76	76	63
51% to 100%	259	255	249	161
Total Mills Reporting	335	331	325	224

* Subject to revision until all reports are received.
These data exclude (a)—Christmas Day, (b)—Fourth of July, (c)—Labor Day.

PAPER BOARD OPERATING RATIOS

According to reports from the National Paperboard Association, per cents of operation, based on "Inch-Hours," were as follows:

1934	1935	1935	1935	1936
Sept. ... 62%	Jan. .. 61%	May .. 61%	Sept. . 69%	Jan. .. 61%
Oct. ... 63%	Feb. .. 67%	June .. 65%	Oct. .. 76%	Feb. .. 67%
Nov. ... 56%	Mar. . 67%	July .. 59%	Nov. . 70%	Mar. . 68%
Dec. (a) 53%	Apr. . 61%	Aug. . 65%	Dec. .. 60%	Apr. .. 70%

Week ending May 9, 1936—67%
Week ending May 16, 1936—67%
Week ending May 23, 1936—67%
Week ending May 30, 1936—69%

Eddy Paper Corp. Builds Plant at Olean

OLEAN, N. Y., June 8, 1936—A new industry for Olean, differing in type from any now here has been formally announced by B. L. Crandall, secretary of the Chamber of Commerce. The organization which has chosen this city as the site of a new plant is the Eddy Paper Corporation of Chicago, manufacturers and fabricators of cartons.

The company is a subsidiary of the Keickhefer Container Company of Milwaukee, Wis., one of the largest and best known firms in the country.

Negotiations for location here were closed with the Eddy Paper Corporation recently and steps are already being taken to construct a plant on a site located near Seventh and Reed Streets. For the beginning of operations, a one-story brick and steel building measuring about eighty by 250 feet and providing approximately 20,000 square feet of floor space, will be erected. In it will be housed the various types of machinery necessary for the manufacture, fabrication and printing of cartons of all kinds.

Construction of the building will be under the supervision of the officials of the Eddy Paper Corporation. It is understood that plans have been made to hasten construction to such a degree that the plant can be in operation by about the middle of July.

According to information available, the new plant will employ about thirty persons at the beginning of operations. The necessary supervisory staff will come here from other plants, now being operated by the company elsewhere.

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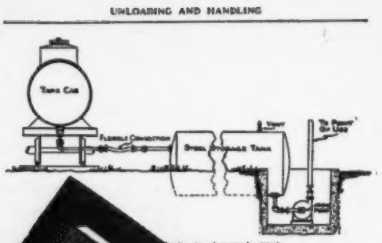

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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Some Papermaking Equipment Observations*

By Harry E. Weston[1]

The past several years have seen an era of new equipment development and improvement in design of existing equipment that has been little short of miraculous. For years past the leading equipment manufacturers have been alert and have continued to offer machines and mechanical devices for the improvement of process operations; but it is believed that outside of the revolutionary changes brought about first by the introduction of the Hollander, later by the paper machine, and still later by the several wood pulp processes that there has been more effort placed by equipment manufacturers in seeking out what the manufacturers of pulp and paper require to make their plant operations more efficient and in attempting to develop equipment to meet the requirements of their findings since that day of 1929 when business received its severe jolt than in any similar period of time previously. It is not believed that this effort on the part of the equipment manufacturers has been altogether altruistic, but rather it has been a means of stimulating business. In some cases, it appears that the desire to live actually prompted it. Nevertheless, as a whole, it has been good for the pulp and paper making industry and is tangible evidence of progress.

The development activity of only the past two or three years, although perhaps not carried on at quite such a feverish heat as in the few years immediately preceding, has resulted in advancement that is worthy of mention. On the part of numerous equipment manufacturers there has been a conscientious desire to apply their knowledge more intelligently in meeting mill requirements as they exist today, and effort has been placed in that direction. In some instances, the effort has not yet been revealed generally to the trade as the developments are still in a nebulous state and may not materialize for some time to come. In other cases, the developments have consisted of only minor changes in the design of equipment that had been introduced previously. Then, too, some developments have been entirely new and the possibilities of some of them can hardly be prognosticated.

Wood Preparation Machinery

One wood preparing equipment design change has included the substitution of a gearless-elevator type motor drive with regenerative braking for a steam engine on a log carriage for cutting logs into cants. This arrangement at times of high speed production must accelerate the carriage and log (often exceeding 16 tons in combined weight), stop this high inertia load, and reverse it to starting position once every seven seconds. High-speed deceleration is made possible by the regenerative braking. A shoe-type auxiliary brake is used only when the carriage is stopped and not under normal cutting or reversing operation.

Announcement also has been made of a design of thawing conveyor for pulpwood. This apparatus, designed to remove frost from the pulpwood during the winter season prior to barking, consists of a system of hot water showers and a well-insulated building in addition to a conveyor system. The building houses, the shower system, and a large part of the conveyor system—the arrangement being such as to permit boiling hot water to be showered on the frozen wood as it is conveyed through the building and the spilled water being returned to a heater.

Improved designs of barking drums also have been announced. One design has been arranged to handle full length logs either continuously or intermittently. Another utilizes a series of wrought iron or steel pipes in place of the conventional channel irons and U-bars in the construction of the drum without resorting to the use of bolts, rivets, or welds. In each case, the development has been made to improve barking drum efficiencies and to decrease maintenance.

Several different designs of screens used in various industries have been adapted to the screening of chips and have shown interesting results. These screens are smaller in size, quieter in operation, and have greater capacity and do a better screening job, according to some evidences than the screens ordinarily employed a few years ago. Power requirements also are less; and, when contrasted with the usual reciprocating type of screen, the newly introduced designs produce little or no noticeable floor vibration.

Pulping Equipment and Process Improvements

Advancements likewise have been made in equipment methods for pulping, in the development of equipment for the production of cooking liquors, and in the development of processes and equipment for the utilization or recovery of the liquors following digestion of the wood. Mechanical feeders for filling digesters with chips, equipment for impregnating chips with liquor in the case of the sulphite process, and equipment for circulation of the

* Presented at the meeting of the Delaware Valley Section of the Technical Association of the Pulp and Paper Industry, April 24, 1936, Engineers Club, Philadelphia, Pa.

[1] Member TAPPI. Editor of *The Paper Industry*, Chicago, Ill.

cooking liquors during the cooking operation might be cited as comparatively recent advances in equipment development for improving the conditions of pulping and for the promotion of greater operating efficiencies.

As to improvements or innovations in methods for pulping, particularly in reference to sulphite pulp, attention might be called to several lines of activity.

One would be improvements in the technique of a method for recovering hot SO_2 gas and liquor under pressure and supplying the cooking acid to the digesters at a relatively high initial temperature and pressure.

Another would be a method of simplified cooking control. In this method, steam entering a digester is made to pass through an orifice of a size that will give the desired maximum temperature in a given time. When this temperature is reached, the valve to the orifice is closed, and a valve to an orifice of smaller dimensions opened to maintain the temperature for the balance of the cook. A pressure control valve, placed on the main relief line, maintains uniform pressure on all digesters.

A third innovation in the cooking of sulphite pulp is a method through which the relief from a digester is passed into a closed storage tank which also acts as a separator and from which the gas goes direct to reclaiming tanks without being cooled, the hot liquid in the separator being used in part for meeting the acid requirements of a digester charge.

A continuous cooking system might be mentioned as a fourth innovation. This system consists in having a digester built of such a height that a temperature of about 125 deg. F. can be maintained at the bottom. The chips are put into the digester by means of a worn conveyor while the acid enters continuously near the top. The cooked pulp flows from the bottom to a level control tank near the top of the digester from where it goes to a dewatering apparatus. At this point a portion of the spent liquor is removed and circulated into the bottom of the digester to aid in removing the cooked pulp. From the dewatering equipment the pulp goes through a series of screw presses where the waste liquor is removed, put into a storage tank, and then to a double effect evaporating system where steam for cooking is generated and the concentrated liquor then burned under the boilers to produce steam for evaporating and other purposes. The acid, made in the usual manner, mixes with the steam from the second effect evaporator in a flash chamber where the sulphur dioxide is separated from the liquid and then passed into the bottom of the digester, the hot acid being passed to the top. Fifty tons daily production with one digester is cited as a possibility for this system which, it is understood, has passed the experimental stage.

Acid Making and Spent Liquor Utilization

A sulphur burner and a system for producing sulphite cooking acid with pulverized limestone rather than with chunks of limestone or with burned lime are two of the developments that might be mentioned in connection with sulphite acid making.

A pit for melting and storing the molten sulphur, a metering pump, an atomizing device, and a waste heat boiler are tied in with the burner in making a complete installation. As the molten sulphur enters the burner proper, which is a horizontal cylindrical steel tank lined with insulating and refractory material and equipped with suitable baffling, it is atomized with a small amount of compressed air at 60 to 90 pounds pressure. The atomized sulphur burns rapidly and produces temperatures of from 2,400 deg. to 2,700 deg. F. The waste heat boiler is stated to produce steam at a minimum rate of 2,500 pounds per hour at 190 pounds pressure at a combustion rate of 12 tons of sulphur per 24 hours and with feed water at 212 deg. F.

The system for using pulverized limestone in the production of sulphite acid employs a method of pulverizing the rock to a fineness that will pass through a 300 mesh wire. It is suggested that at this fineness the material will practically stay in suspension like burned lime.

The utilization of spent sulphite liquor, one of the most baffling and intriguing problems of the sulphite industry for a number of years, has remained in the limelight and only recently a commercial sized plant has been put into operation at one of the midwestern mills to utilize it. At the same time, some publicity has been given to another process for the evaporation and combustion of waste sulphite liquor by which, it is stated, a mill can manufacture and dry sulphite pulp without depending on any substantial source of fuel other than the lignin removed from the wood in the cooking process.

Some work also has been done on recovery equipment for the alkaline pulping processes. For example, considerable progress has been made in improving the design of black liquor evaporators. The tendency in this regard has been toward the use of forced circulation high concentrators to concentrate the liquor to approximately 60-70 per cent total solids. Then, too, there have been improvements in several processes for the recovery of chemicals and heat from kraft and soda black liquors.

Pulp Washing and Screening

One development, perhaps older than most of them which have been mentioned and yet one that is not so well known to the trade as a whole, involves the design of a pulp washing press. This press is a combination of conveyors, presses, showers for washing, and hackling or teaser rolls which together make for rapid washing of the stock with little dilution of spent liquors. It has a capacity for handling about 50 tons of pulp per day.

There have been some comparatively recent improvements in screen plate design, and some tests are being conducted on the use of chrome nickel steel for this purpose. Tentative conclusions indicate that plates of chrome nickel steel will prove highly satisfactory.

At the same time, there have been some innovations in pulp screen design—both in revamping some of the older design and in bringing out completely new types. Probably the most outstanding modernization job has been done with the diaphragm type of unit. An eccentric type drive assuring positive, uniform stroke of the diaphragms has been substituted for the older type of drive. Metal vats may be had in place of wood. Screen height has been lessened, and numerous other improvements made. Power requirements for several of the improved designs approximate 1/10 hp. per plate.

Thickening Equipment Changes

There also is being offered a three-roll hydraulic wet machine combined with a vacuum cylinder instead of the conventional open cylinder and at least one improved design of decker that is said to handle up to 120 tons of sulphite from screening consistency to 5 per cent. Insofar as cylinder mould construction is concerned, there likewise have been improvements. The newer designs provide more strength with the same weight of materials.

A new design of vacuum filter embracing bronze, Monel, cast iron, stainless steel, and all rubber covered construction is finding application within the industry. A rubber covered vacuum machine for washing stock after chlorination and before neutralizing has been installed in a number of mills. Then, too, an auxiliary vacuum press has been incorporated into the design of a vacuum machine to receive the sheet from it and bring

the consistency up to 18 or 20 per cent for subsequent high density bleaching.

At this point, it might be mentioned that a double agitator type mixer with certain refinements is finding application for opening up stock as it comes from the filters or thickeners and for blending such stock with bleach liquor.

Some Refining Equipment Developments

Equipment for the refining of screenings, and of raw or semi-cooked chips and for the defibering and treatment of old paper stock and broke as well as various kinds of pulp took several lines of development. The attrition mill of both single and double discs types, neither of which are particularly new to the pulp and paper industry, have been studied more carefully and more is known about handling it and about what it will do.

In the newer developments of equipment and methods for the treatment of old paper stock and broke as well as various kinds of pulp is a combination defibering and high density screening unit, a high density pulper, a combination high density pulper and refiner, a broke reclaiming unit, and a system designated as hydraulic beating.

The combination defibering and high density screening unit was originally designed for handling mixed paper stock for board mills. In addition to defibering and screening such stock, it removes long trash such as cellophane, rubber bands and rags as well as metal and dirt.

The essential elements of this device are two circular perforated discs or screens which are clamped in a case much like the elements in a filter press. A four-blade stainless steel impeller is arranged to rotate between these screen plates. Mounted on the paddle blades are hinged scrapers or wiper blades which are held out by centrifugal force and the pressure of the stock so that they are in light rubbing contact with the screen plates. This action causes the bundles of fibers that are entrapped in the screen perforations to be brushed out and forced through as accepted stock. The heavy materials as well as rags, rubber bands, and the like are thrown to the outside as rejects and ejected from the machine. There is sufficient pressure set up by the impeller to pump these rejects a considerable distance—usual practice being to discharge to a detrashing unit located over a settling trough where acceptable fibers rejected with the trash are recovered and returned to the inlet of the defibering and screening unit where they are passed through the machine again. This recycling is continued until the fibers are reduced sufficiently to pass through the screen perforations, preferably ⅛-inch holes, as accepted stock.

The high density pulper consists of a large tub of cast iron, steel or wood with a midfeather and a steep, sloping bottom; a series of breaker arms; and a high capacity low head impact impeller pump. The pulper, made in whatever size required, is built for batch operation and to pulp at consistencies up to 12 per cent.

Stock, fed to the pulper in much the same manner as in filling an ordinary beater, is subjected at the low point of the circuit to both breaking and defibering action prior to its elevation by the impact impeller pump to the upper level of the tub. So efficient is this breaking and defibering action that a single pass of a sheet pulp one inch thick through the pulper is said to be sufficient to reduce the pulp to pieces not larger than an ordinary finger nail. Likewise, the action is said not to cut or bruise the fibers but rather to debundle them.

This same machine is suggested for use in bleaching, coloring and de-inking.

The combination high density pulper and refiner is a combination of the preceding pulper unit with a refiner of the jordan type so designed as to keep the stock from channeling straight through. This refiner is incorporated into the pulper design in such a manner that it receives under a constant head about 10 per cent of the stock from the circulating pump, the remainder being returned direct to the tub. A portion of the discharge from the refiner may be bled off and the rest returned to the tub for circulation; or the entire discharge may be passed back to the tub.

This combination unit, designed to replace breakers and beaters, is stated to be adaptable for use on all liner stock in board mills and on sulphite, sulphate, and soda pulp. Furthermore, it is said to be capable of operation at either light consistency or heavy consistency (up to 10 per cent), according to the results desired.

The broke reclaiming unit, in general, comprises a collecting chest with slanting side walls, a disintegrator unit, and a two-chamber compartment for the partly and wholly reconditioned stock respectively. White water fed through shower pipes, arranged both at the ceiling and on the side walls of the collecting chest, moistens the broke immediately upon its entrance to the chest and gives it a thorough soaking. The soaked broke, through a current created by a circulation pump, is moved toward the disintegrator unit where rotary breaker arms reduce it to small pieces. Stock particles sufficiently broken up by the disintegrator pass on through a coarse rake into the coarse stock chamber from which a circulation pump returns it to the collecting chest at the end opposite to the one at which the disintegrator unit connects. This pump exerts a defibering action on the stock and disintegrates it sufficiently so that upon its return through the system it passes from the coarse stock chamber into the fine stock chamber through a fine rake that is between them. A centrifugal pump draws the stock from the fine stock chamber and delivers it to a broke chest or machine chest.

The system has been developed primarily to handle large quantities of dry broke which sometimes accrue on modern fast running paper machines, particularly newsprint machines.

The hydraulic beating system, a combination of a hydraulic refiner and a specially designed centrifugal pump which together are tied in with a breaker or broke beater has been introduced for the defiberization of broke, mixed papers, and pulp as well as for hydration. For defibering of broke and waste paper, because of two opposing nozzles in the refiner and the ability of the pump to continuously maintain high critical nozzle pressures, stock meets stock at approximately 100 feet per second nozzle velocity. For hydration effects, the stock from the nozzles is impinged against plates that are equipped with a steel or stone filling. In either case, the hydraulically refined stock drops into a circulating chest that is located directly below the refiner and from which it is discharged to chests or beaters.

It is claimed that the treatment accorded stock by this system will thoroughly pulp the toughest broke with low power; and that when the hydrating plates with steel or stone filling are used, jordans and refiners in most cases can be eliminated.

Other Developments of Stock Preparation Equipment

There also have been other developments in stock preparing equipment during the past few years. For example: There has been the introduction of a beater with beater roll that rotates in the direction opposite to that of the conventional Hollander type beater and with bed plate that is suspended at a point above the roll and controlled by means of air pressure. There has been the work on the beater that circulates its stock vortex-like. There has been the development of a jordan-like unit to the operated

either as a continuous unit in the line or as a batch unit with a beater. There has been the development of a new type of jordan plug. There has been work on another machine, as far as is known not yet officially announced, which it is understood retains the desirable features of the beater with respect to the drawing out of fibers but with new features incorporated in its design that will make one small unit capable of producing results equivalent to 5-10 beaters with only a fraction of the power input load.

The beater with the air-controlled bed plate and reverse traveling roll, which by the way turns in fixed bearings, may be of cast iron, cast iron tile lined, concrete, or concrete tile lined construction. It is available in sizes ranging from 700-2000 pounds capacity at 8 per cent consistency.

Three essential elements comprise the beater with vortex-like circulation—a motor driven rotor, an inner bowl or stator, and an outer bowl or tub. The tub is cylindrical, a 1500-pound beater of this type taking about one-half the floor space for a Hollander of equal capacity. In the lower center of the tub is the stator which has the combined function of midfeather and bedplate. It may be raised or lowered to regulate the degree of refining action. In the center of the stator and extending beneath it is the rotor. The upper section carries a feeder screw, while the lower section corresponds to a beater roll. The screw equipped rotor circulates the stock, disintegrates it and forces it downward and outward between the refining elements of the rotor and stator where it flows up between the tub wall and the outer wall of the stator, finally overflowing into the stator bowl for recirculation.

The jordan-like stock treating machine is a very compact high speed unit utilizing the principle of close clearances and high surface speeds for producing the refining action. The surface speed of the plug at the large end is approximately 6500 feet per minute. A special impeller on the small end of the plug and which rotates within a fluted orifice tube, tends to pump stock into the refining areas at the small end of the plug faster that it can be discharged at the large end. This action results in overcoming acceleration of stock through the machine. The impeller also partially neutralizes the thrust and relieves the load on main thrust bearing.

This machine, depending on service, is said to have a capacity as high as 150 tons per 24 hours with power requirements from 100 hp. to 250 hp.

The new type of jordan plug, which is said to have more than twice as much strength, or bar support, as any conventional band type plug or any other bandless plug can be built for any and all makes and sizes of jordans. It also is claimed that, due to the increased area of metal supporting the sides of the bars, there is correspondingly less wear in the slots, and consequently the bars stay tighter for longer periods of time.

Before leaving the subject of stock preparation, mention should be made of efforts to automatically control the work of the beater and jordan. There is work of that nature in progress at the present time, which in case of the beater, is directed toward the development of equipment to make automatic control of adjustments of the beater roll according to a predetermined master chart without attendance of an operator and to record results attained throughout the twenty-four hours, and, in the case of the jordan, to automatically control the adjustments of the jordan and to record the results attained over a twenty-four hour period.

Then before proceeding with paper machine developments, some comment should be made regarding consistency and weight regulators. At least three of these devices have been introduced to the market probably in as many years, and two of them are of very recent origin. Of the latter two, one regulator utilizes a beater-like tub for mixing and circulating the stock by means of a motor driven agitator. Suspended in the stock is a feeler which actuates a dilution valve and thus regulates consistency, a portion of the regulated stock passing out of the regulator through a stuff regulating gate to the paper machine. The second of these latter two developments covers a regulator that is said to be accurate on consistencies as low as one-tenth of one per cent. Numerous advantages are cited for it, particularly the screening of pulp stock at proper density.

General Trends in Paper Machine Design

In addition to the actual new developments of the past few years in connection with paper machines, there has been a definite tendency for increased width of machines and increased speed on nearly all grades of paper besides news and kraft. Tissue machines are wider and running faster. Book machines are definitely thought of in terms of wider machines, and speed is becoming a factor, which is more and more being considered on the higher grades of paper. There also has been the trend to improve operation and simplify construction of both fourdrinier and cylinder machines.

Wet End Developments

Several years ago saw the introduction of a fourdrinier part in which shake is applied to the wire through the breast roll and a roll known as a shake roll, introduced into the middle of the table, approximately midway between the breast roll and the suction boxes. The breast roll and shake roll are each equipped with independent shake heads that are adjustable as to length of stroke. Grip is obtained by raising the shake roll above the adjoining table rolls, and no shake is applied to table rolls and side frames.

Only recently has come the announcement of the invention of a fourdrinier part in which the axes of the tube rolls may be moved at any desired rectilinear speed in the same direction of travel as the wire. Hence, tube rolls do not rotate, if the axes of the rolls and the wire travel at identical speeds. If the axes of the rolls move slower or faster than the wire, the rolls rotate either clockwise or counterclockwise at peripheral speeds to compensate for the difference in rectilinear speed.

Among the other recent developments in connection with the fourdrinier part that might be mentioned are: stock inlet design improvements; development of a tallow-treated, end-of-grain, maple suction box cover; improvements in shower pipe design, renewable stainless steel spray nozzles in at least one of them; several new designs of shake heads that permit adjustment in length of stroke while in operation; development of a combined wire oscillator and guide to prevent freezing of the wire on the suction boxes as well as to guide it; development of a combined automatic stretch and guide roll to relieve strain on the wire cloth; and improvements in dandy roll design, including open ended construction and use of anti-friction bearings, trunnions, welded and silver soldered seams, internal steam and water showers, and triangular rods and cone shaped winding wire in surface construction.

Mention also might be made, considering both fourdrinier and cylinder types of machine, of other recent wet end developments.

There have been some changes in suction roll design. In one make of roll, the operating head has been redesigned to make it more compact, to protect the operating parts, and to make it neater in appearance. Some

suction press rolls have been rubber covered; and suction felt rolls have been installed on both wet and press felts for keeping them open and clean and to replace the usual suction box for the purpose.

A device consisting of a wire faced bottom roll and a rubber covered top roll, arranged for compound weighting, has been applied to cylinder machines to remove the excess or free water in a sheet right after it leaves the last mold. Such a mechanism is equipped with a slice, and a shower is placed on the bottom roll to keep it clean. No drive or vacuum pump is required for it.

Another development is that of a roll, designated as a suction drum roll, to perform work parallel to that of the unit just previously mentioned. Its application is determined by conditions surrounding the machine, the operation desired, paper machine speed, grade of paper being made, etc.

The Drier Section

Changes in the drier section include a drier gear development, a couple of new designs of steam joints, and the introduction of several new drainage systems and improvements in some of the older systems.

The drier gear development makes use of drier gears considerably smaller than the diameter of the driers. These are connected one to the other through pinions, and the entire arrangement enclosed.

In lubricating such a train of gears, a smaller amount of lubricant is placed on the drier gear at the wet end of the machine. The gears themselves carry the lubricant toward the dry end, lubricating each of them as it goes along. The lubricant is picked up at the dry end, pumped over to the wet end, and used over again.

This type of drier gear arrangement opens up space on the backside of a machine, allowing more room to the operator in removing broke, and permits the backside of the machine to be kept clean.

One of the recently developed steam joints for dryers is equipped with an anti-friction thrust bearing as well as with a ball friction disc composed of graphited asbestos. This ball disc aligns the elbow with the sleeve, and the thrust bearing takes the thrust of holding these two parts together. They are connected by two bolts, each of which tightens on a spring.

The other steam joint or steam fit as it is called, utilizes a flat oilless type disc with the syphon pipe remaining at all times in a fixed position with relation to the inside of the drier. The syphon pipe is supported at two points and is welded into the head of the joint. The joint is self-adjusting in accordance with the amount of pressure carried on the machine. Expansion and contraction is met through the use of a flexble pipe joint in the inlet and exhaust lines.

Drier Drainage Systems

A condensation drainage device without any moving parts or air vents and with which the discharge rate depends upon the temperature of condensate water, has been applied to paper machine drainage, one device being installed on each drier of a machine so equipped. It is stated that this device may be adjusted to operate on any steam pressure from 0 to 250 pounds and that it is being used successfully, when made of steel, for pressures up to 450 pounds.

Another system that has been introduced for paper machine drainage places an ejector nozzle at the inside end of each syphon pipe. This nozzle sucks up the condensate from the drier, retards the flow of steam (due to restricted area of orifice), and automatically sets up a pressure differential between the inside of the drier and the condensate header which causes the condensate to flow out of the drier. The amount of accumulated condensate in the dryer may be controlled by adjusting the radial position of the syphon.

A third new system has been introduced as a means of controlling the moisture content of paper. In this system, the sheet temperature is measured by a sensitive electric thermometer and the temperature impulse communicated through a potentiometer and pressure transformer to a steam-flow control unit which acts to maintain a ratio between the flow of steam into the driers and the moisture content of the sheet.

Improvements in the older systems include the development in one case, of two new systems, one for high pressure paper machines and the other for low.

The high pressure system is applicable to machines in which the steam pressure used for drying ranges anywhere from 5 to 50 pounds. The operating principle is said to be similar to that of a steam turbine in which the steam is expanded through various stages to a vacuum, giving up heat in the process. Steam is supplied to the machine at the dry end and circulated through divided sections of the driers until all the useful heat is absorbed in the last wet end dryers. This procedure creates and maintains a definite and positive drop in pressure between sections, which is claimed to insure a constant and unrestricted discharge of all condensate and air from every drier. The flash steam in the condensate, prior to returning the condensate to the boiler room, is used in producing graduated wet end surface temperatures.

The second system is designed for operating at as low as 15 inches of vacuum in the wet end driers, the main purpose of the system being to produce an evenly dried sheet with a uniform moisture content in preference to any radical increase in machine production.

In another of the older systems, a change has been made in the differential valve and sight flow steam regulator employed with the system. The differential pressure control valve, through the change, is now a self-contained differential valve which will operate from as low a pressure as 15 inches of vacuum to 50 pounds steam pressure. It is used to control differential in pressure between sections, a blowing through section and a condensing section. The sight flow regulator now employed permits better observation of drier discharge, it being suggested that a man can stand at the dry end of a 30-drier machine and see the discharge from every drier.

Another drainage system, which up until recently utilized a dryer drainage pump of sufficient capacity to handle the returns from the entire paper machine dryer and reduced its temperature either through the introduction of cooling water at the pump or by means of an air water cooler in the return line, now incorporates into the system a separate hot condensate pump that is driven from the main motor. With this arrangement, the hot condensate from the flash tank or tanks in a two or more pass system is not mixed with the cooler condensate from the condensing section. This permits the carrying of higher vacuum without the use of cooling water. Likewise, the main unit is proportioned to take care of the condensing section only, a hot condensate pump of the proper size being provided to take care of the condensate from the flash tanks. (Under certain conditions of pressure, it is suggested, cooling water may still be needed but in much less quantity than formerly to achieve the same results.) The hot water delivered from the condensate pump joins the cooler water from the vacuum unit in a common return line to the feedwater heater.

Slitting and winding equipment, likewise, has come in for some attention. This attention has brought about re-

finements in design that are contributing to decreasing maintenance cost and improving operation.

New Drives for Paper Machines

Several new types of paper machine drives also have been introduced to the trade within a comparatively short time.

There is an electric top press roll drive in which a special compound wound motor is either directly or chain driven to the top press roll and a generator chain driven from the pinion shaft of the quarter turn unit. This generator supplies the current for driving the motor. If the speed of the machine is changed, the speed of the generator will vary in direct proportion. Consequently, the voltage from the generator which is impressed on the motor varies in a similar manner, and the motor follows the speed of the machine.

A rheostat, used to increase or decrease the amount of power input to the roll, allows the operator to make easy adjustments. Excitation current for both the motor and generator is supplied by an exciter which is also furnished with the drive.

Several designs of individual motor drives for the wet end of cylinder machines have been developed. Such drives are designed to relieve felt tension, and through so doing have resulted in increasing felt life, in allowing the use of a more open felt, and in allowing the use of a wider deckle.

Other paper machine developments that might be mentioned would include a system developed to introduce filler to the wet web on a paper machine wire; a variable pitch propeller type vat pump for cylinder machines; and a forming machine for wall board, insulating board, and other heavy sheets in which formation takes place in a straight line.

Finishing and Converting Equipment

There also has been some activity in improving finishing room and converting equipment.

One rotary cutter for example, has been improved by substituting a positive and variable sheet length control mechanism for the usual expansion pulley, step pulleys and change gears; and by installing a variable speed clutch to permit operation within wide range of speeds, and a free wheeling feed drum control and clutch to permit hand feeding of paper when adjusting knife. Quieter operation also is obtained through the use of noiseless intermediate gears.

A roll separating device, electrically operated and controlled by push buttons, has been developed for use on supercalendars. This device enables the rolls to be separated at every opportunity, allows circulation of air around paper rolls to prevent burning, and aids in removing the rolls for repairs.

Another supercalender improvement consists of making the frames in sections with provision for removing the bottom roll, plus the coupling, endwise without disturbing the set of intermediate rolls and top roll. There has also been improvement in the design of intermediate roll journal boxes, side bearing strips, and oiling system for roll journals. More rolls with wider faces, likewise, are being used in glassine calenders—14 and 16 rolls in place of 12 and 13 and as wide as 73 inches face. The larger stacks are said to produce much greater finish and transparency with uniformity across the entire sheet.

Speed with incident increase in production seems to have been the keynote behind some of the recent design changes in converting equipment. There has been an increase in speed on toilet folding, towel folding, and napkin folding machines so that productive capacity in the case of each individual type of machines has been increased considerably. A napkin folding machine that requires no belts in the delivery has been developed, and an embossing unit has been attached with at least one paper machine winder to emboss and rewind toilet tissue rolls, the embossing unit being capable of running at full winder speed.

New Control and Testing Instruments

Numerous citations might be made of improvements in design or in the development or introduction of instruments for control and testing purposes.

A slowness tester has been re-designed and construction and operation simplified. The new design, supported on its own feet, is easily set up and leveled for work. Its drainage chamber, set with petcock downward and in closed position, is filled with stock sample to be tested. Screen is snapped on, and drainage chamber placed in position over divided funnel with petcock upward. Petcock is then opened and test continued until discharge from side outlet of divided funnel ceases. Reading consists of number of cubic centimeters of water collected from side outlet as measured in graduated cylinder. If multi-stage readings are desired, separate readings are taken at stated intervals of time during filling of graduated cylinder.

A sheet machine re-designed some years ago, was placed on the open market in 1935. In using this machine, the recommended practice is to remove each sheet with the screen forming it and to dry in this position. Couching, if preferred, is accomplished by inverting screen with sheet on a wet felt, and the deposited sheet then pressed and dried in the usual manner.

An instrument for measuring the porosity of paper has been improved by the use of a more powerful capston clamp in its base. This improvement prevents side leakage and permits use of proper amount of pressure upon the paper being tested.

The more recently developed or introduced control and testing instruments would include a slowness tester designated as automatic, a white water sampler, a pulp classifier, a tensile tester, a formation tester, a multiple folding endurance tester, a combined smoothness and porosity tester, a paper hardness tester, and others.

The automatic slowness tester is designed so that the making of a test simply requires a brisk vertical thrust of the instrument into the stock up to the handle. It is held in this position until a spindle at center of instrument ceases to rise—a matter of three to five seconds. The instrument is then withdrawn from stock and graduations read on spindle.

The white water sampler furnished with motor for either 110 or 220 volts a-c., is arranged so that its immersion cylinder is submerged at a fixed level in the white water within a weir box. It is a compact, and water tight unit.

The pulp classifier through a system of stationary baffles and rotary screens, turns the fibers in a batch of pulp so that their length is broadside to a classification screen. The machine is operated at a predetermined speed and classification of the fibers is accomplished by flowing through four screen compartments—the screen mesh increasing in fineness in each compartment from the entering screen to the exit screen. This principle of induced circulation is said to result in a very fine classification of fiber lengths, best results being secured after a five-minute duration for a batch run.

The newly developed tensile strength tester made to conform to TAPPI requirements and methods, includes a graduated stationary sector that is provided with two

scales. The scales are graduated to read in pounds or kilograms. The sector has a number of fine teeth on its upper surface into which the multiple pawl on the pendulum falls. An elongation device operates simultaneously with the tensile test. Power is hydraulically applied by means of a self-contained electrically driven oil pump. In normal operation, the tester is set for a speed of 12 inches per minute, but when necessary the speed may be varied from 1 inch to 24 inches per minute. The tester is made in various capacities up to 1000 pounds.

The formation tester uses a photoelectric cell to measure the quality of paper known as formation. The sample to be measured is moved at high velocity between a steady light source and the photoelectric cell. The variations in opacity of the paper cause a fluctuation in the photoelectric cell current. These fluctuations are amplified by means of an a-c. amplifier, until they are of sufficient magnitude to operate a meter. The average steady photocell current is indicated on a second meter. The ratio of these two meter readings gives the formation number. Provision also is made for adjusting the steady current component to the same value for every sample to be tested, making the reading of the output meter alone the formation number.

The multiple folding endurance tester has ten vertical spindles operated by a cross arm so that ten folding tests can be made simultaneously. The paper is alternately folded under compression and straightened under tension, the folding being reversed at each stroke. The compression load is ½ kilogram, while the tension load may be varied from ½ to 3 kilograms, depending upon the grade of paper being tested. A counter automatically indicates the number of folds, a break causing disengagement of a counter latch from the counter. The tester is electrically driven with a direct connected motor mounted on the frame.

The combined smoothness and porosity tester as its name indicates, may be used for the measurement of paper smoothness as well as permeability. In part, it consists of a mercury manometer, a vacuum pump, a polished metal anvil and a three way valve. The manometer is connected to the vacuum pump, anvil and atmosphere by means of the three way valve. In making a smoothness determination, the paper to be tested is placed with the test side next to the polished surface of the anvil, after which a pad of soft gum rubber and a polished metal disc are placed over the sheet to act as an insulator and to prevent passage of air through the paper. Pressure is then applied to the metal disc through a lever arm; and vacuum applied until the mercury rises slightly above the 380 mm. mark. The valve is then adjusted so that it connects the vacuum reservoir and the anvil, and the time required for the mercury to drop 20 mm. is determined by means of a stop watch. A low stop watch reading indicates a rough paper, and a high reading indicates smooth paper. Slight changes in this procedure permit the instrument to be used for measurement of air permeability.

The paper hardness tester is designed to permit the measurement of height of rebound of a swinging pendulum and the depth of indentation made by the impact of its indenting body upon the sheet being tested. In general, it is stated that the determination of the diameter of the indentation caused by the swing of the pendulum is sufficient to determine the hardness of a paper sample. The distance of fall and weight of pendulum are so selected that impact occurs at a velocity of 1 meter per second and with the energy of a body of 100 grams.

In addition to the specific developments and improvements which have been mentioned and others that might be mentioned are a number of other developments of perhaps a more miscellanous character and yet of interest to pulp and paper making.

The general trend within the industry, for example, has been toward the handling of higher stock consistencies. This trend has necessitated a new line of pumps in which larger passages have been incorporated to permit use of moderately low liquid velocities and to allow for stock to be handled directly from stock chest without it being agitated thoroughly. Some of the advanced features of pump design include top horizontal discharge arranged to sweep gases in direction of flow to prevent gas binding, accessibility to all parts without disturbing permanent setting, deeper stuffing boxes, larger shafts, and other features to reduce cost of maintenance.

There also has been a development in centrifugal casting that permits pipe to be produced in alloys not obtainable in wrought form, and to make such pipe in sizes up to 22 inches o.d. This centrifugally cast pipe is suggested for use in hot acid installations and for blow pipes as well as for some other tubular product applications within the industry.

The uses for Monel metal have been studied and now it is being recommended for screening, dewatering, reclaiming, washing, beating, refining, sizing, coloring, paper machine, caustic recovery, and pumping applications.

A suction box conditioner has been introduced to the trade, and among the other miscellaneous developments that might be listed are improved or new designs of agitators, agitator drives, stock valves, steam traps, wood rolls, tanks, roll grinders, and equipment for materials handling.

May this resume, incomplete as it is, serve as recognition for those progressive manufacturers who are contributing to the progress and development of the pulp and papermaking industry.

Delaware Valley Section Finale

The Delaware Valley Section of the Technical Association of the Pulp and Paper Industry will close its very successful season on Friday June 19th at 8:00 P. M. at the Bala Country Club, 50th and Woodbine Avenue, Bala, Pa., with an informal dinner and dance. For those who wish to play golf provision has been made to have the links open to TAPPI members and friends throughout the day.

Reservations must be made with Riley M. Bates of Thomas M. Royal & Co., 5800 North Seventh street, Philadelphia, who is chairman. Many reservations have already been received and an unusually fine program is being arranged.

New England TAPPI to Meet at Toy Town

The New England Section of the Technical Association of the Pulp and Paper Industry will hold its final meeting and outing at the Toy Town Tavern, Winchendon, Massachusetts, Friday and Saturday, June 12 and 13. The speaker at the meeting will be Mrs. Wanda K. Farr of the Boyce-Thompson Institute, who will talk on "Cellulose Fundamentals." There will be a golf tournament.

Correction

For the benefit of those who attended the meeting of the Delaware Valley Section of TAPPI on May 22, attention is drawn to a typographical error that was present in the chart shown by James d'A. Clark.

In the figures given for the burst factors of the bleached sulphite, the unbeaten test should be 24.3 and not 34.3 seconds.

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Drying

Lowering Cost of Drying on Paper Machines. Peter J. Abel. Paper Mill 58, No. 19: 20-21 (May 11, 1935).—A brief outline of the devices and systems of the Stickle Co., Indianapolis, to facilitate and improve paper drying. —A. P.-C.

Semi-Commercial Drying of Press Board by Measuring Its Electrical Resistance. E. R. Whittemore, C. B. Overman and Baker Wingfield. Ind. Eng. Chem. 27: 831-833 (July, 1935).—In the production of pressboards from cornstalks, it was necessary to develop a method for determining the maximum moisture content at which the boards can be safely removed from the hot press without danger of the development of steam blisters which result from underdrying. Further drying is uneconomical as regards both steam consumption and press output. Following the platen and board temperatures or making a time-moisture curve is unsatisfactory but measurement of the electrical resistance is feasible for determining the safe minimum time for removal of the board from the hot press.—A. P.-C.

Characteristics and Advantages of Yankee Machines. Papyro. Papeterie 57: 638, 641 (July 25, 1935).—A brief discussion.—A. P.-C.

Arrangement for Conducting the Condensate from Enclosed Spaces, Drying Cylinders and Similar Objects. T. N. Molin, Karlskoga. Swed. pat. 82, 410 (Nov. 20, 1933).—J. F. O.

Drying Device. A. Bol Svenska Flaktfabriken, Stockholm. Swed. pat. 82, 488 (Jan. 17, 1930).—J. F. O.

Process and Device for the Drying of Paper on the Highly Polished Cylinder of a Yankee Machine. S. Milne, Edinbourgh, Scotland, Finn. pat. 16, 235 (June 26, 1933).—Large quantities of air are blown against the cylinder where the evaporation of the water from the paper takes place.—J. F. O.

Seam for Drier Felt. Thomas Hindle and Sam Lord. U. S. pat. 2,010,302 (Aug. 6, 1935).—A loop about 2 in. wide is formed along each end of the felt; the folded over portion is cut with a number of narrow slots longitudinal of the felt and spaced equidistantly across, and a number of approximately H-shaped links are inserted in the respective slots to attach the two ends of the felt together.—A. P.-C.

Drier Cylinder. Paul M. F. Buettner. U. S. pat. 2,008,434 (July 16, 1935).—Inside the cylinder is a large concentric core, which is connected directly with the atmosphere. Steam is admitted through one of the trunnions and is delivered uniformly throughout the space between the drier cylinder and core by means of a number of suitably placed pipes.—A. P.-C.

Conveyor for Drying Plants. F. I. E. Stenfors and P. G. Artelius assignors to Aktiebolaget Svenska Fläktfabriken. U. S. pat. 1,999,066 (April 23, 1935).—In a drying chamber in which paper or board is conducted back and forth in a zig-zag path over a series of superposed horizontal conveyors, large-diameter guide rolls are provided for reversing the wet web as it passes from one conveyor to the next without abrupt change in direction so as to decrease the strain and reduce danger of breaks in the sheet.—A. P. -C.

Apparatus for Continuously Drying Fiber Board. Francis I. Du Pont assignor to Mineralite Corp. U. S. pat. 2,010,917 (Aug. 13, 1935).—The board is passed between two spaced hood-like members. The lower one is maintained under partial vacuum and heated gas is circulated in the upper one.—A. P. -C

Method of and Apparatus for Drying Coated Paper. Morgan L. Woodruff assignor to Oxford Paper Co. U. S. pat. 2,012,115 (Aug. 20, 1935).—Coated paper is dried by direct contact with air heated to 200° to 500°F. moving at a speed of 1800 to 5000 ft. per min. relative to the paper, and removing the latter from contact with the hot air as soon as the desired degree of dryness has been reached.—A. P. -C.

Regulating the Dryness of Paper. Société Française des Régulateurs Universels Arca assignor to British Arca Regulators, Ltd. Brit. pat. 423, 435 (Jan. 28, 1935). —The water-content of paper is regulated automatically by a hydraulic reguator actuated conjointly by two or more factors associated with drying.—A. P.-C.

Pulps

Pulp for Artificial Silk. Eberhardt Munds. Wochbl. Papierfabr. 66, No. 21:401-03; No. 22:419-21 (May 25, June 1, 1935).—The author begins by discussing the various kinds of artificial silks, their properties and qualities. Then the process of manufacture of the pulp from the selection of wood to the testing of the finished pulp is described in detail.—J.F.O.

The Importance of Pulps for the Industry of Cellulose Derivatives, especially for artificial silks. D. Kruger. Zellstoffaser 32, No. 3:33-38 (March, 1935).—The author discusses; general requirements of the properties of cellulose fibers for the manufacture of cellulose derivatives; the various plant materials and the properties of the cellulose and cellulose derivatives obtained therefrom; new decomposition processes for the recovery of pulp for further chemical treatment; and new ideas concerning the uses of the various plant materials obtained by chemical treatment from the pulp. 75 references accompanies the article.—J.F.O.

Comparison of Various Rayon and Paper Chemical Pulps By Means of the Solubility Curve. T. Nakashima and Y. Matsushita. J. Soc. Chem. Ind Japan 38: 180-181B (1935).—The positions and heights of the maximums are recorded for the differential curves of solubility against copper in cuprammonium for several celluloses. The maximums for rayon pulp from wood are at 0.038 to 0.060 molecule of copper per liter; those for paper pulp are generally higher. The curve for Japanese bleached pulp is very similar to that for a rayon pulp and it should therefore be suitable for rayon manufacture.—A. P. -C.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Everett, Wash.—The Soundview Pulp Company, manufacturer of bleached sulphite fiber products, has preliminary plans under consideration for new additions to mill for large increase in present capacity. A number of new units are proposed, with installation of machinery to more than double present output. Cost over $1,000,000, with equipment. Company has negotiations under way with municipal officials for additional water supply totaling about 12,000,000 gallons daily for service in new additions and it is planned to construct a pipe line for this purpose. L. S. Burdon is general manager.

Fredericksburg, Va.—The Sylvania Industrial Corporation, manufacturer of transparent cellulose paper products, has approved plans for new addition to mill and will proceed with superstructure at once. It is reported to cost over $50,000, with equipment. General erection contract has been let to the Hughes-Foulkrod Company, Schaff Building, Philadelphia, Pa. The Ballinger Company, 105 South Twelfth street, Philadelphia, is architect and engineer. Main offices of company are at 122 East Forty-second street, New York, N. Y.

Lynn, Mass.—The Hoague-Sprague Corporation, Lynn, manufacturer of cardboard boxes and containers for shoes, etc., has concluded arrangements for purchase of local factory at 130 Eastern avenue, comprising a large tract of land, improved with a seven and eight-story building, totaling about 223,000 square feet of floor space. The property is assessed by city at $565,950, and has been owned heretofore by Hilliard & Merrill, Inc., manufacturer of leather soles and kindred products. New owner is planning to occupy plant in near future, and will install equipment and facilities for large increase in present production. Company is a subsidiary of the United Shoe Machinery Corporation, 140 Federal street, Boston, Mass.

Indianapolis, Ind.—The Beveridge Paper Company, 701 West Washington street, has taken out a permit to make alterations and repairs in building, location noted. No estimate of cost has been announced.

Mobile, Ala.—The Ruberoid Company, manufacturer of roofing products, asbestos shingles, felts, etc., has work in progress on new additions to branch plant at Mobile, previously referred to in these columns, comprising three main buildings and office unit, and will have structures ready for equipment installation at early date. A one-story structure, 70 x 305 feet, will be used for general production; an adjoining one-story unit, 120 x 120 feet, will be equipped for storage and distributing service, including facilities for handling dry felt; the third building will be one-story, 40 x 70 feet, and equipped as a machine shop. Installation will include conveyors and other mechanical-handling equipment, wet machine and electric apparatus, as well as fuel oil storage facilities. The new plant will give employment to about 150 additional operatives at the mill and is estimated to cost over $200,000, including machinery.

Brooklyn, N. Y.—The Koslow Carton Corporation has been organized with capital of $20,000, to manufacture paper boxes and containers, and will take over and operate the business of Charles Koslow, 127 Varet street, specializing in this line of production. Mr. Koslow will head new company.

Stamford, Conn.—The Stamford Wall Paper Company, Greenwich avenue, manufacturer of wall papers, has plans for new two-story and basement addition to plant, for which general contract will be awarded at early date. Cost over $25,000, with equipment.

Houston, Tex.—The Champion Paper and Fibre Company, Hamilton, Ohio, has contracted with the Layne-Texas Company, 6931 Harrisonburg boulevard, Houston, for water supply and facilities for its new pulp mill now in course of construction on the Houston ship channel, to develop a capacity of 20,000,000 gallons per day, as will be required at the plant. Wells will be drilled, with installation of pumping machinery and accessories, pipe lines, etc. Company is also arranging for pulpwood supply for mill and has placed contract for the purchase of second growth yellow pine on tract of about 705,000 acres of land in 12 counties in Eastern part of the State from the Southwestern Settlement Development Corporation; the contract calls for a maximum of 10,000 cords of pinewood, cut from trees not less than 5 inches in diameter, with cutting and removal to mill to begin not later than March 1, 1937. Active work is in progress on the different plant units under the direction of the Morton C. Tuttle Company, 31 St. James avenue, Boston, Mass., general contractor for the project, which will represent a total investment of over $3,000,000.

Niagara Falls, N. Y.—In connection with recent acquisition of the paint division of the Certain-Teed Products Corporation, 100 East 42nd street, New York, N. Y., by the Glidden Company, Cleveland, Ohio, and the removal of that branch from company mill on Military road, the Certain-Teed company will continue operations at its local wall board and building paper mill, as heretofore. The vacated space, previously used by paint division, will be given over primarily to storage and distribution expansion at the plant.

Cumberland, Md.—The Celanese Corporation of America, Amcelle, near Cumberland, has approved plans for three new buildings at its cellulose rayon mill, and will proceed with superstructure at early date. Contract for structural steel framing has been let to the Bethlehem Steel Company, Bethlehem, Pa. General erection contract has been awarded to George Hazelwood, Cumberland. Entire project is reported to cost over $85,000, with

equipment. Main offices of company are at 180 Madison avenue, New York, N. Y.

Gatineau, Que.—The Canadian International Paper Company, 1155 Beaver Hall Square, Montreal, Que., has asked bids on general contract for rebuilding of portion of fiber board mill at Gatineau, recently destroyed by fire, as previously reported in these columns, and will place award at early date. New equipment will be installed to replace machinery damaged by fire, including drying room apparatus, kilns and other equipment. Cost over $100,000, with machinery.

New Companies

Brooklyn, N. Y.—The Benson Paper and Specialties Corporation has been incorporated with capital of $20,000, to deal in paper products of various kinds. New company is represented by Mitchell Antman, 29 Broadway, New York, N. Y.

New York, N. Y.—Display Cutouts, Inc., has been formed with capital of 300 shares of stock, no par value, to operate a paper converting plant for production of cutouts for advertising and display service. New company is represented by Alexander N. Wolf, 1775 Broadway, New York.

Wilmington, Del.—The Fibre Plastic Corporation has been incorporated under direction of the Colonial Charter Company, Ford Building, Wilmington, with capital of $50,000, to manufacture and deal in fiber products.

Akron, Ohio—The Independent Wall Paper Company has been charted with capital of 250 shares of stock, no par value, to deal in wall papers, etc. The incorporators include W. H. Cox, G. M. Coates and Bernard J. Amer, 1522 First Central Tower Building, Cleveland. Last noted is company representative.

New York, N. Y.—The Ansonia Label and Printing Company, Inc., has been formed with capital of $10,000, to manufacture paper labels and kindred paper products. New company is represented by Benn Nisonoff, 33 West Forty-second street, New York.

Government Paper Bids and Awards

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 10, 1936—The Stanford Paper Company has been awarded the contract for furnishing the Government Printing Office with 41,700 pounds of 21 x 32 and 28 x 34 white sulphite ledger paper at 6.054 cents per pound.

The Whitaker Paper Company will furnish 5,000 pounds (13,000 sheets) of 19 x 24 white blotting paper at 10 cents per pound. The R. P. Andrews Paper Company will furnish 6,250 pounds (50,000 sheets) of 20 x 25 50 per cent rag blue antique cover paper at 10.57 cents per pound. Bids for these items were received on May 25.

The United Supply Company will furnish 10,000 pounds of No. 1 gummed kraft paper in 24 inch rolls at 7 cents per pound, bids for which were received on May 22.

The Printing Office has received the following bids for 60,525 pounds (225,000 sheets) of 38 x 48 halftone book paper; Whitaker Paper Company, 5.67 cents per pound; Bulkley, Dunton & Company, 5.67 cents; John F. Post, Inc., 5.1 cents; Stanford Paper Company, 5.1 cents; R. P. Andrews Paper Company, 5.67 cents; J. W. Butler Paper Company, 6.17 cents; Bryant Paper Company, 5.67 cents; Paper Corporation of the U. S., 5.67 cents; Mathers-Lamm Paper Company, 5.08 cents; and P. H. Glatfelder Company, 5.1 cents.

The R. P. Andrews Paper Company will furnish 2,500 pounds (17,900 sheets) of 28 x 34, 100 per cent rag, ledger paper at 27.1 cents per pound, bids for which were received on May 27.

INSTITUTE OPENS ADDITION

(Continued from page 13)

of work in pulp and paper technology, including an exhaustive study of fibers. Third year students study dyeing, cooking, bleaching and similar processes. Research leading to a degree of doctor of philosphy is completed in the fourth or fifth year. The institute is now at the point of undertaking a coherent and related 4-year program of mill visits.

Last summer, Dr. Lewis said, the Institute had 21 students spread throughout mills all the way from Philadelphia to Longview, Wash. "I cannot stress too strongly," he added, "the importance of the mill work in the development of the student. He comes back after a summer close to the digester or the paper machine, full of questions and ideas which he often immediately begins to put up to the staff in one form or another."

Westbrook Steele Also Speaks

Another speaker was Westbrook Steele, executive secretary, who explained four types of research carried on at the Institute, all of them intended to be of service to the paper industry. The first, fundamental research, includes the student theses and specific staff research projects which are initiated to provide background or foundation for broader investigation. Second, there is the research on general problems which should be of interest and ultimate benefit to the paper industry as a whole. The third is research of a confidential nature on a specific problem presented by an individual member mill or a group of member mills. The fourth is research of a confidential nature on a specific problem presented by an allied industry, confined to those supplying materials or equipment to the paper industry.

Mr. Steele announced that a technical conference for representatives of member mills, similar to those started three years ago, will be held from June 22 to July 2, led by Dr. Rowland.

Lawrence College Elects Trustees

The annual meeting of the board of trustees of Lawrence College, which conducts the Institute, was also held last week. Dr. Henry M. Priston, president of the college and director of the Institute, said in his report that the Institute budget has climbed close to a quarter of a million dollars, and remains in balance. In the course of a year, a series of gifts has added nearly $40,000 to the endowment of scholarship funds, and gifts of about $25,000 have been received for other specific purposes. Membership in the Institute has increased greatly, he reported, with a larger increase this year than in any previous year. Two new members have joined the board of trustees, Richard J. Cullen, president of the International Paper Company, and J. D. Zellerbach, executive vice-president of the Crown-Zellerbach Corporation. There are now 65 members on the staff, of whom 20 hold the doctor of philosophy degree, received from 15 different institutions.

F. J. Sensenbrenner Made Vice-President

At the annual election of the board of trustees of Lawrence College, F. J. Sensenbrenner, president of the Kimberly-Clark Corporation, was made first vice-president. He succeeds John Bergstrom, president of the Bergstrom Paper Company. Mr. Sensenbrenner has been a trustee since 1933. Among those reelected as trustees are Charles S. Boyd, president of the Appleton Coated Paper Company, and Karl E. Stansbury, president of the Thilmany Pulp and Paper Company.

Don't Be An Ostrich, Mr. Paper Maker!

Pull your head out of that hill of sand which is the daily routine of your own mill. Look around! See what the rest of the paper makers are doing with the help of their friends in the allied industries.

You can learn a lot in three days at Grand Rapids, Michigan, June 24, 25, and 26, when the Seventeenth Annual Convention of the American Pulp and Paper Mill Superintendents Association will be held at the Hotel Pantlind in conjunction with a pulp and paper exposition in the magnificent Civic Auditorium adjoining the hotel.

The very latest developments in pulp and paper mill practice and equipment will be reviewed in papers presented by recognized authorities.

Ample time will be allotted for general discussion of the subjects treated.

Special group meetings will give superintendents and other production executives an opportunity to learn something new on matter of direct, practical value to their own mills.

Outstanding personalities of the industry as well as speakers of national prominence will address the convention.

Entertainment and sports features of the highest order, with special provisions to make the occasion most enjoyable for the ladies.

A comprehensive exposition will present working models, drawings, photographs and literature on all that is new in the way of pulp and paper mill equipment and processes.

Every pulp and paper mill executive can profit by attending this convention and exposition.

Send in your reservations at once to the Hotel Pantlind, Grand Rapids, Michigan.

F. L. ZELLERS, General Chairman. **CHAS. CHAMPION, President.**

New $2,000,000 Loan for Brown Co.

BERLIN, N. H., June 8, 1936—Upon the assurance by Orton B. Brown, a trustee of the Brown Company, that there had been no consideration of wage cutting as a means of aiding the company to an earlier recovery under the managership of Henry P. Carruth, the city council approved another $2,000,000 loan by contract for the woods cutting operations of the company.

The company owed the city an unsecured balance of $566,324, when it entered its petition in bankruptcy on September 4, 1935. Since that date wood loan contracts have been entered into with the stipulation that the company pay the city $1 per cord for every cord cut, to reduce that unsecured balance. To date $68,593 has been paid in, leaving a balance to be liquidated of $497,324. There is receivable on wood used to April 30, last, the sum of $23,848, which leaves an actual balance of $473,884 to be paid.

The new contract is considered the most advantageous, both for the city and the company, which has yet been drawn up. It calls for a payment of about $1.35 per cord toward reducing the unsecured balance of $473,884 still owed the city. It is expected that this amount will have been entirely cleaned up at the termination of this contract.

Beaupre Paper Mill Deal

A special dispatch to The New York Times from Quebec states that taking over of the Abitibi Pulp and Paper Corporation mill at Ste. Anne de Beaupre by the Anglo-Canadian Pulp and Paper Mills is reported now to be but a question of a few weeks, for negotiations have reached the stage where merely differences of opinion have to be straightened out. The mill has been closed for the last four yars.

R. A. McInnis, general manager of the Anglo mill, is reported to have made several trips to Toronto to confer with Abitibi officials regarding operation of the mill by the Quebec concern.

Overhead costs have been a problem delaying change of ownership, but such progress has been made within the last month that it is expected the mill will be operating by the early Fall.

The Ontario Paper Corporation, a subsidiary of *The Chicago Tribune*, was reported ready to lease the Beaupre mill some months ago, before it decided to build its own plant at Comeau Bay.

May Buy American Writing Mills

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., June 9, 1936—Erving Mills, Erving Mass., are prospective buyers of two divisions of American Writing Paper Company, Inc., in this city.

The divisions are the Holyoke Division and George R. Dickinson, both idle for some years. Both were formerly used for the manufacture of writing, bond and ledger paper.

The price agreed upon for these two idle plants is $55,000, confirmation of the sale awaits approval of the Federal District Court of Boston, June 18. This sale did not include the paper machinery or other machinery excepting the water wheels from minor machinery.

The mills of the Erving Company were badly affected by the big flood in this section and thought that it would be more economical to buy these mills than to repair the present mills, with the possibility of future floods damage in the future years.

Dayton Increases Payrolls

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, June 8, 1936—The paper trade is sharing in the prosperity of the country, if one desires to call it "prosperity" (and it seems such following the protracted period of depression) as reflected in the industrial and mercantile payrolls in Dayton during May, this month having shown an increase of $1,247,004.92 over April 1936, according to figures compiled by A. C. Wolf, secretary of the Dayton Clearing House Association, and which were released the past week.

The local payrolls amounted last month to $6,545,825.21. For April the total was $5,398,820.29.

The latest figures also reveal an increase of $1,061,-104.56 over May, 1935.

Continued gains are shown in the payroll figures for the five months of the present year over a like period in 1935.

The distribution in money for payrolls from January to May, inclusive, this year amounted to $28,406,132.45 and for the same period in 1935, it was $24,216,886.13, a gain this year up to June 1 of $4,198,246.32.

This year's gain is within $1,256,000 of the gain for all of 1935 over 1934. Payrolls in 1935 were $5,445,246.61 more than in 1934.

With the diversity of paper products manufactured in Dayton, the trade can justly claim a fair portion of the credit for increasing Dayton payrolls.

St. Lawrence Paper Mills Issue

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., June 8, 1936—A special meeting of shareholders of the St. Lawrence Paper Mills Company has been called for June 15 to consider an authorization of an issue of $2,500,000 twenty-year 5 per cent mortgage bonds. Part of the proceeds will be used to settle liabilities to the Shawinigan Water and Power Company and to the Brompton Pulp and Paper Company. To the former $700,533 is owing and to the latter $271,541. The board has effected an arrangement by which these two claims can be settled for cash payments to a total of $600,-000. The balance of the proceeds of the issue will be used to create a desirable line of credit and for such other use as occasion may dictate.

Shartle Expands to Meet An Increased Demand for Machinery

In 1906 Shartle Brothers Machine Company built the first unit of its present shop. This unit had 11,200 square feet of floor space. In 1913 the company added 8,000 square feet and 40,968 square feet in 1923. Now the company is adding 12,800 square feet. In other words, since 1906 Shartle Brothers have increased their floor space about five and one-half times.

Eastern Board Mill Sold

COATESVILLE, Pa., June 8, 1936—The paper mill property of the Eastern Board and Paper Corporation, located at Buck Run, East Fallowfield township, brought $25,000 at a sheriff's sale recently at West Chester. It was purchased by J. Paul MacElree, who said he represented the firm of Schmidt & Ault, York, Pa. Walter E. Greenwood, attorney for the plantiff in the sale, bid the property to over $20,000 before it was finally sold.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JUNE 6, 1936

CIGARETTE PAPER

Champagne Paper Corp., *Paris,* Havre, 932 cs.

WALL PAPER

———, *Paris,* Havre, 7 cs.; ———, *St. Louis,* Hamburg, 2 cs.; ———, *Europa,* Bremen, 1 ble., 5 cs.; ———, *Noshiro Maru,* Yokohama, 1 cs.

NEWSPRINT

H. G. Craig Co., *Newscarrier,* Donnacona, 334 rolls; N. Y. Evening Journal, *Orla,* Quebec, 5,569 rolls; Jay Madden Corp., *St. Louis,* Hamburg, 474 rolls; N. Y. Times, *Markland,* Liverpool, N. S., 267 rolls; N. Y. Tribune, *Markland,* Liverpool, N. S., 1,649 rolls; World Telegram, *Markland,* Liverpool, N. S., 585 rolls; Brooklyn Daily Eagle, *Markland,* Liverpool, N. S., 337 rolls; Standard Star, *Markland,* Liverpool, N. S., 40 rolls; Clinton Paper Corp., *Markland,* Liverpool, N. S., 989 rolls; H. Reeve Angel & Co. Inc., *Cliffwood,* Kotka, 168 rolls; Lunham & Reeve, Inc., *Cliffwood,* Kotka, 227 rolls; Jay Madden Corp., *Cliffwood,* Kotka, 320 rolls; N. Y. Post, *Hellen,* Port Alfred, Que., 1,572 rolls; Gilman Paper Co., *Hellen,* Port Alfred, Que., 546 rolls; ———, *Chr. Sass,* Port Alfred, Que., 1,512 rolls; ———, *Bergensfjord,* Oslo, 160 rolls; Perkins Goodwin & Co., *Hansa,* Hamburg, 689 rolls; Lunham & Reeve, Inc., *Hallaren,* Kotka, 226 rolls; Jay Madden Corp., *Hallaren,* Kotka, 305 rolls; Brooklyn Times, *Hallaren,* Norrkoeping, 422 rolls; Gilman Paper Co., *Hallaren,* Norrkoeping, 510 rolls; Walker, Goulard Plehn Co., Inc., *Hallaren,* Viipuri, 141 rolls; Jay Madden Corp., *Pr. Roosevelt,* Hamburg, 223 rolls.

PRINTING PAPER

R. J. Saunders, *Queen Mary,* Southampton, 2 cs.; Oxford University Press, *Laconia,* Liverpool, 27 cs.; American Paper Exchange, Inc., *Pr. Hayes,* Shanghai, 1 cs.; Dingelstedt & Co., *Europa,* Bremen, 68 crates, 17 cs.; E. Dietzgen & Co., *Hansa,* Hamburg, 35 cs.; Japan Paper Co., *Hansa,* Hamburg, 9 cs.

WRAPPING PAPER

Jay Madden Corp., *Pr. Roosevelt,* Hamburg, 542 rolls.

FILTER PAPER

H. Reeve Angel & Co. Inc., *American Farmer,* London, 16 cs.; H. Reeve Angel & Co. Inc., *Queen Mary,* Southampton, 10 bls., 2 cs.

FILTER COMPOUND

A. W. Fenton, Inc., *Hansa,* Hamburg, 75 bls.

DRAWING PAPER

Keuffel & Esser Co., *American Farmer,* London, 1 cs.

SURFACE COATED PAPER

Gevaert Co. of America, *Black Gull,* Antwerp, 96 c s.; Globe Shipping Co., *Europa,* Bremen, 28 crates; C. Happel, *Hansa,* Hamburg, 12 cs.

BARYTA COATED PAPER

Atlantic F'd'g. Co., *Hansa,* Hamburg, 12 cs.

METAL COATED PAPER

K. Pauli Co., *Hansa,* Hamburg, 14 cs.

PHOTO PAPER

American Express Co., *Hansa,* Hamburg, 37 cs.

BASIC PAPER

———, *Koenigstein,* Antwerp, 13 cs.

DECALCOMANIAS

Gerhard & Hey, *Europa,* Bremen, 2 cs.; Sellers Transportation Co., *Europa,* Bremen, 14 cs.

COLORED PAPER

D. C. Andrews & Co., *Europa,* Bremen, 4 cs.

GUMMED PAPER

Heemsoth Pinkus & Kerner, *Europa,* Bremen, 9 cs.

WAX PAPER

———, *Hansa,* Hamburg, 6 cs.

WRITING PAPER

Rohner Gehrig & Co., *Pr. Roosevelt,* Havre, 1 cs.

WOOD PULP PAPER

A. Giese & Son, *Beemsterdyk,* Rotterdam, 5 bls.

PAPER TUBES

———, *Hansa,* Hamburg, 151 pkgs.

MISCELLANEOUS PAPER

F. C. Strype, *American Importer,* Liverpool, 4 cs.; E. Fougera & Co., *Paris,* Havre, 51 cs.; Coty Processing Co., *Paris,* Havre, 10 cs.; Favor Ruhl & Co., *Paris,* Havre, 4 cs.; ———, *Hansa,* Hamburg, 384 rolls.

RAGS, BAGGINGS, ETC.

———, *Transylvania,* Glasgow, 61 bls. bagging; Katzenstein & Keene, Inc., *Navemar,* Barcelona, 76 bls. old cottons; Katzenstein & Keene, Inc., *Navemar,* Barcelona, 59 bls. bagging; Birkenstein & Long, Inc., *Navemar,* Barcelona, 542 bls. old cottons; Birkenstein & Long, Inc., *Navemar,* Barcelona, 113 bls. bagging; E. J. Keller Co. Inc., *Schodack,* ———, 54 bls. bagging, 244 bls. paper stock; Birkenstein & Long, Inc., *Schodack,* Havre, 117 bls. bagging; Castle & Overton, Inc., *Schodack,* Havre, 63 bls. rags; Irving Trust Co., *Schodack,* Havre, 49 bls. new cuttings; J. Eisenberg & Co. Inc., *Schodack,* Dunkirk, 18 bls. rags; Chase National Bank, *Magallanes,* Barcelona, 65 bls. rags; Manufacturers Trust Co., *Magallanes,* Alicante, 48 bls. rags; ———, *American Farmer,* London, 267 bls. rags; J. C. Cohen & Son, Inc., *American Farmer,* London, 31 bls. rags; ———, *American Importer,* Manchester, 91 bls. cotton waste; E. Butterworth & Co. Inc., *American Importer,* Manchester, 135 bls. rags; E. J. Keller Co. Inc., *American Importer,* ——— 48 bls. bagging; M. Snedeker Corp., *American Importer,* Belfast, 289 bls. paper stock; ———, *Waukegan,* Bristol, 303 bls. rags; ———, *Waukegan,* Leith, 92 bls. rags, 118 bls. bagging; Castle & Overton, Inc., *Waukegan,* Dundee, 100 bls. paper stock; J. J. Ryan & Sons, Inc., *Norfolk Maru,* Shanghai, 60 bls. cotton waste; W. Garretson, *Norfolk Maru,* Shanghai, 240

bls. rags; ———, *Norfolk Maru,* Kobe, 360 bls. cotton waste; Chase National Bank, *Norfolk Maru,* Kobe, 400 bls. bagging, 125 bls. rags; Delia Waste Products Corp., *Norfolk Maru,* Kobe, 65 bls. rags; ———, *Estrella,* Barcelona, 124 bls. bagging; Banco Coml. Italiane Trust Co., *Estrella,* Barcelona, 97 bls. rags; Bank of N. Y. Trust Co., *Estrella,* Barcelona, 173 bls. rags, 79 bls. bagging; Chase National Bank, *Estrella,* Barcelona, 85 bls. rags; ———, *Pr. Hayes,* Bombay, 100 bls. cotton waste; Leigh Textile Co., *Pr. Hayes,* Bombay, 100 bls. cotton waste; Royal Manfg. Co., *Pr. Hayes,* Bombay, 56 bls. cotton waste; Chase National Bank, *Pr. Hayes,* Bombay, 75 bls. rags; Manufacturers Trust Co., *Pr. Hayes,* Bombay, 365 bls. cotton waste; E. Butterworth & Co. Inc., *Black Gull,* Antwerp, 80 bls. bagging; E. J. Keller Co., Inc., *Black Gull,* ———, 28 bls. rags; Chase National Bank, *Black Gull,* Antwerp, 21 bls. rags; ———, *Black Gull,* Antwerp, 87 bls. bagging; Irving Trust Co., *Koenigstein,* Antwerp, 61 bls. bagging; ———, *Koenigstein,* Antwerp, 115 bls. bagging; D. Bennedetto Inc., *Black Condor,* Rotterdam, 49 bls. rags; E. J. Keller Co. Inc., *Beemsterdyk,* ———, 117 bls. bagging; G. W. Millar & Co. Inc., *Beemsterdyk,* Rotterdam, 109 bls. rags; R. Blank, *Beemsterdyk,* Rotterdam, 153 bls. rags: Great Eastern Packing & Paperstock Corp., *Beemsterdyk,* Rotterdam, 84 bls. bagging; New England Waste Co., *Tai Yang,* Kobe, 400 bls. bagging; J. J. Ryan & Sons, Inc., *Tai Yang,* Kobe, 50 bls. cotton waste; Hoffman Lion Mills, *Noshiro Maru,* Kobe, 170 bls. rags; E. J. Keller Co. Inc., *Noshiro Maru,* ———, 400 bls. bagging; O'Brien Padawer Co., *Noshiro Maru,* Kobe, 500 bls. cotton waste; ———, *Pr. Roosevelt,* Hamburg, 75 bls. rags; E. J. Keller Co. Inc., *Exmouth,* ———, 48 bls. bagging, 88 bls. paper stock.

GLUE STOCK

———, *Vulcania,* Trieste, 400 bags ground hide glue; ———, *Vulcania,* Trieste, 100 bags bone glue.

OLD ROPE

Brown Bros. Harriman & Co., *Navemar,* Seville, 179 coils; Banco Coml. Italiane Trust Co., *Magallanes,* Malaga, 169 coils; W. Steck & Co., *Magallanes,* Vigo, 89 coils; Chase National Bank, *American Farmer,* London, 107 coils; ———, *Waukegan,* Leith, 57 coils; W. Steck & Co., *Estrella,* Marseilles, 140 coils; Continental Bank Trust Co., *Black Condor,* Rotterdam, 83 coils, 11 bls.; W. Steck & Co., *Beemsterdyk,* Rotterdam, 110 coils; Irving Trust Co., *Beemsterdyk,* Rotterdam, 78 coils.

CASEIN

———, *Schodack,* Havre, 450 bags; Chase National Bank, *Paris,* Havre, 333 bags; Swift & Co., *Southern Cross,* Buenos Ayres, 334 bags; Balfour Guthrie & Co., J. *Jadot,* Antwerp, 358 bags.

WOOD PULP

Price & Pierce, Ltd., *Etna,* Wallvik, 1,350 bls. sulphite, 225 tons; Price & Pierce, Ltd., *Etna,* Hernosand, 11,100 bls. sulphate, 1,850 tons; Pagel Horton & Co. Inc., *Etna,* Domsjo, 1,834 bls. sulphite, 300 tons; Perkins Goodwin & Co., *Etna,* Sundsvall, 2,748 bls. sulphate, 458 tons; Perkins Goodwin & Co., *Etna,* Sundsvall, 600 bls. sulphite, 100 tons; Bulkley Dunton & Co., *Etna,* ———, 4,750 bls. woodpulp, 950 tons, Lagerloef Trading Co., *Cliffwood,* Helsingfors, 130 bls. sulphate, 26 tons; Lagerloef Trading Co., *Cliffwood,* Wiborg, 312 bls. sulphate, 52 tons; Lagerloef Trading Co., *Cliffwood,* Kotka, 1,004 bls. sulphite, 178 tons; Lagerloef Trading Co., *Cliffwood,* Kotka, 227 bls. sulphate, 45 tons; Bulkley Dunton & Co., *Beemsterdyk,* ———, 830 bls. wood pulp; Perkins Goodwin & Co., *Cliffwood,* Gdynia, 490 bls. wood pulp, 75 tons; E. M. Sergeant Pulp & Chemical Co., Inc., *Bergensfjord,* Oslo, 300 bls. chemical pulp; Perkins, Goodwin & Co., *Bergensfjord,* Drammen, 250 bls. sulphite; J. Andersen & Co., *Bergensfjord,* Oslo, 2,000 bls. sulphite; Bank of N. Y. Trust Co., *Hansa,* Hamburg, 2,800 bls. wood pulp, 560 tons; Castle & Overton, Inc., *Hansa,* Hamburg, 250 bls. wood pulp, 50 tons; Perkins Goodwin & Co., *Hansa,* Hamburg, 900 bls. chemical pulp, 152 tons; ———, *Vulcania,* Trieste, 352 bls. wood pulp; ———, *Hallaren,* Stockholm, 1,050 bls. sulphite; Lagerloef Trading Co., *Hallaren,* Kotka, 390 bls. sulphate; Lagerloef Trading Co., *Hallaren,* Kotka, 265 bls. sulphite; Lagerloef Trading Co., *Hallaren,* Viipuri, 1,154 bls. sulphate; Lagerloef Trading Co., *Hallaren,* Viipuri, 2,032 bls. sulphite; Castle & Overton, Inc., *Hallaren,* Viipuri, 661 bls. wood pulp; M. Sone, *Maria,* Trieste, 540 bls. wood pulp; ———, *Maria,* Trieste, 1,305 bls. wood pulp; ———, *Pr. Roosevelt,* Hamburg, 194 bls. wood pulp.

WOOD PULP BOARDS

Jay Madden Corp., *Cliffwood,* Wiborg, 31 rolls, 5 tons; Jay Madden Corp., *Cliffwood,* Kotka, 50 rolls, 16 tons; Jay Madden Corp., *Cliffwood,* Kotka, 126 bls., 14 tons; ———, *Cliffwood,* Viipuri, 638 bls.

WOOD PULP SHEETS

———, *Hansa,* Hamburg, 72 bls.

NEWARK IMPORTS

WEEK ENDING JUNE 6, 1936

H. G. Craig Co., *Donnacona, I.,* Donnacona, 559 rolls newsprint; H. G. Craig Co., *Donpaco,* Donnacona, 314 rolls newsprint.

ALBANY IMPORTS

WEEK ENDING JUNE 6, 1936

International Paper Co., *Bur,* Newcastle, N. B., 2,100 cords pulpwood; Gottesman & Co. Inc., *Cliffwood,* Stockholm, 1,950 bls. sulphite, 330 tons; Price & Pierce, Ltd., *Cliffwood,* Stockholm, 300 bls. sulphite, 50 tons; J. Andersen & Co., *Cliffwood,* Stockholm, 600 bls. sulphite, 100 tons; Lagerloef Trading Co., *Cliffwood,* Helsingfors, 786 bls. sulphite, 130 tons; Lagerloef Trading Co., *Cliffwood,* Wiborg, 942 bls. sulphate, 157 tons; Lagerloef Trading Co., *Cliffwood,* Wiborg, 826 bls. sulphite, 138 tons.

BOSTON IMPORTS

WEEK ENDING JUNE 6, 1936

Ayres W. C. Jones Co., *Schodack,* Havre, 59 bls. cotton waste; ———, *Schodack,* Dunkirk, 43 bls. rags; ———, *Laconia,* Liverpool, 210 bags hide cuttings; G. F. Malcolm, Inc., *Laconia,* Liverpool, 2 cs. tissue paper; Stone & Downer Co., *Laconia,* Liverpool, 1 cs. tissue paper; ———, *Black Condor,* Antwerp, 47 bls. cotton waste; E. Butterworth & Co., Inc., *Black Condor,* Antwerp, 33 bls. jute waste; Meredith Linen Mills, *Black Condor,* Antwerp, 113 bls. flax waste; ———, *Black Condor,* Antwerp, 232 bls. rags; Royal Manfg. Co., *Black Condor,* Antwerp, 141 bls. cotton waste; J. W. Garry Co., *Noshiro Maru,* Yokohama, 2 cs. wallpaper; ———, *Maria,* Trieste, 316 bls. wood pulp.

CAMDEN IMPORTS

WEEK ENDING JUNE 6, 1936

Lagerloef Trading Co., *Cliffwood,* Wiborg, 3,810 bls. sulphate, 762 tons; New England Waste Co., *Noshiro Maru,* Kobe, 100 bls. cotton waste; American Over-Ocean Corp., *Noshiro Maru,* Kobe, 83 bls. cotton waste; ———, *Maria,* Trieste, 160 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING JUNE 6, 1936

———, *Waukegan,* Hamburg, 104 bls., 84 rolls wrapping paper; J. M. Hagy Waste Works, *Norfolk Maru,*

(Continued on page 48)

WOOD PULP
AGENTS

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Leaders of precision, sensitivity, modern design, perfect workmanship for over half a century.

For T.A.P.P.I. and A.S.T.M. Standard Tests.

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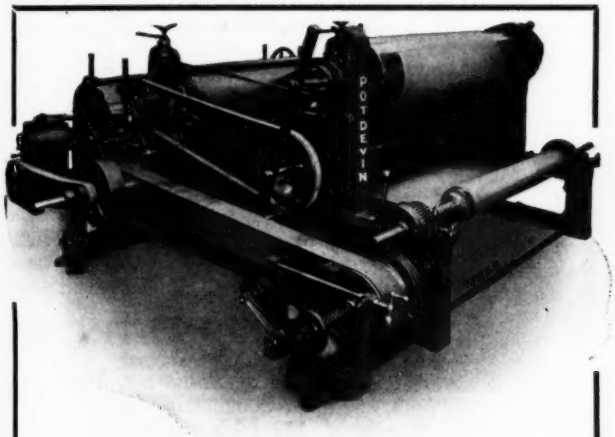

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THE SINCLAIR COMPANY
Holyoke, Mass.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, June 10, 1936.

Conditions in the local paper market are satisfactory for the season. Demand for the various standard grades of paper is fairly persistent. Sales forces of the leading paper organizations are generally optimistic over the future outlook. Prices are holding to previously quoted levels, in most instances.

The newsprint paper market is stronger than for some time past. With advertising lineage and circulations of the leading newspapers running ahead of last year's record, consumption of newsprint is expanding and production has been speeded up to meet increased requirements. Higher prices in the near future are freely predicted.

Considering the time of year, demand for the various grades of fine paper is brisk. Book, cover, writing and ledger papers continue steady. Tissues are moving in good volume for the season. The coarse paper market is firm, with specialties moving freely. The paper board market is moderately active. Prices are fairly steady.

Mechanical Pulp

The ground wood pulp market is fairly active. Demand from the paper mills is normal for the season. Manufacturing operations in North America and abroad are being keyed to consumption, as far as possible. The statistical position of the industry is considered sound. Prices are holding to schedule and shading is infrequent.

Chemical Pulp

Offerings of the various domestic and imported grades of chemical pulp are limited, with the result that prices continue firm. Bleached sulphite pulp and kraft pulp are particularly strong at present and more interest is being displayed by the paper mills in bleachable grades of unbleached sulphite.

Old Rope and Bagging

The position of the old rope market is practically unchanged. Paper mill demand for domestic and imported old manila rope is light. Mixed strings are moving slowly. Old rope prices are fairly steady. The bagging market continues quiet. Scrap and gunny bagging are spotty, while roofing bagging is listless.

Rags

Business in the domestic rag market is dull. Little interest is being displayed at present in either new or old cotton rags. Roofing grades are quiet. No radical changes transpired in the imported rag market. The outlook for the future, however, is fairly encouraging and trading should become livelier towards the end of the summer holidays.

Waste Paper

Some improvement was noticed in several grades of paper stock. The lower grades are steadier, due to increased interest of the board mills. Prices of strictly folded news and No. 1 mixed paper are well sustained. The higher grades of waste paper are holding up well. Book stock is in better demand. Old kraft machine compressed bales are firm.

Twine

While most of the business transacted in the local twine market during the past week was routine, demand for the various varieties is considered fairly satisfactory for the season. Quotations remain unchanged, in most instances, despite the usual keen competition for desirable orders.

IMPORTS OF PAPER AND PAPER STOCK

(Continued from page 46)

Kobe, 50 bls. cotton waste; ———, *Norfolk Maru*, Kobe, 374 bls. rags; Lagerloef Trading Co., *Cliffwood*, Wiborg, 2,032 bls. sulphite, 399 tons; J. W. Hampton Jr. Co., *Cliffwood*, Kotka, 290 rolls newsprint; H. Reeve Angel & Co., Inc., *Cliffwood*, Kotka, 68 rolls newsprint; Jay Madden Corp., *Cliffwood*, Kotka, 287 bls. wood pulp boards, 41 tons; Jay Madden Corp., *Cliffwood*, Kotka, 196 rolls newsprint; E. J. Keller Co. Inc., *Black Condor*, ———, 359 bls. rags; W. F. Sherwood & Son, *Black Condor*, Rotterdam, 184 bls. rags; ———, *Black Condor*, Rotterdam, 484 bls. rags; R. Blank, *Black Condor*, Antwerp, 66 bls. rags; M. Friedman, *Black Condor*, Antwerp, 119 bls. rags; ———, *Black Condor*, Antwerp, 233 bls. rags; W. F. Sherwood & Son, *Black Condor*, Antwerp, 98 bls. rags; ———, *Chr. Sass*, Port Alfred, Que., 2,162 rolls newsprint; G. W. Millar & Co. Inc., *Beemsterdyk*, Rotterdam, 49 bls. rags; Castle & Overton, Inc., *Beemsterdyk*, Rotterdam, 109 bls. rags; E. J. Keller Co. Inc., *Beemsterdyk*, ———, 59 bls. rags; ———, *Marian Sanudo*, Genoa, 13 cs. vellum paper.

BALTIMORE IMPORTS

WEEK ENDING JUNE 6, 1936

Castle & Overton, Inc., *City of Baltimore*, Hamburg, 3,750 bls. wood pulp, 750 tons; Congoleum Nairn Co., *City of Baltimore*, Hamburg, 149 bls. rags; Philadelphia National Bank, *City of Baltimore*, Hamburg, 187 bls. rags; Washington Post, *Markland*, Liverpool, N. S., 2,762 rolls newsprint, ———, *Chr. Sass*, Port Alfred, Que., 3,149 rolls newsprint; ———, *Maria*, Trieste, 2,500 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING JUNE 6, 1936

Champagne Paper Corp., *City of Baltimore*, Havre, 153 cs. cigarette paper; R. J. Reynolds Tobacco Co., *City of Baltimore*, Havre, 1,031 cs. cigarette paper; ———, *City of Baltimore*, Hamburg, 48 rolls newsprint.

CALIFORNIA IMPORTS

WEEK ENDING JUNE 6, 1936

E. J. Keller Co. Inc., *Delftdyk*, ———, 372 bls. paper stock.

J. Andersen & Co.

Selling Agents

21 East 40th Street

New York

CHEMICAL & MECHANICAL PULP

Kraft Pulp

BERGVIK OCH ALA NYA AKTIEBOLAG
Söderhamn, Sweden
KALIX TRÄINDUSTRI AKTIEBOLAG
Vanaffärden, Sweden
MUNKSUNDS AKTIEBOLAG
Munksund, Sweden
NENSJÖ CELLULOSA A.-B.
Sprängsviken, Sweden

Bleached Sulphite

KELLNER-PARTINGTON PAPER PULP CO., LTD.
Sarpsborg, Norway
Edsvalla, Sweden
Hallein & Villach, Austria

Unbleached Sulphite

AKTIESELSKABET GREÅKER CELLULOSEFABRIK
Greaker, Norway
BERGVIK OCH ALA NYA AKTIEBOLAG
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CELLULOSEFABRIKS A.-G.
Bratislava, Czecho-Slovakia
SVANÖ AKTIEBOLAG
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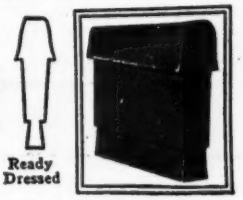

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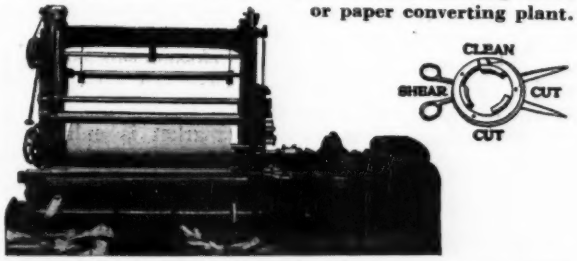

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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, June 10, 1936.

BLANC FIXE—Business in the blanc fixe market is moderately active. Prices are generally holding to previously quoted levels. The pulp is quoted at $42.50 to $45 per ton, in bulk; while the powder is selling at 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER—The bleaching powder market is displaying a fairly strong undertone. Shipments against contract are moving with regularity. Prices remain unchanged. Bleaching powder is quoted at $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN—The casein market is fairly steady. Domestic standard ground is quoted at 15 and finely ground at 15½; while French and Argentine standard are selling at 15¼ and finely ground at 15½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA—Paper mill demand for caustic soda is fairly persistent. The contract movement is normal for the time of year. Solid caustic soda is quoted at $2.55 to $2.60; while the flake and ground are selling at $2.95 to $3 per 100 pounds, in drums, at works.

CHINA CLAY—The position of the china clay market is practically unchanged. Prices are holding to schedule. Imported china clay is quoted at $13.50 to $21 per ton, ship side; while domestic paper making clay is selling at $6.50 to $12 per ton, at mine.

CHLORINE—Demand for chlorine is brisk. The contract movement is well up to average for the time of year. Prices are holding to formerly quoted levels, without difficulty. Chlorine is quoted at $2.15 to $2.55 per 100 pounds, in tank cars, at works.

ROSIN—The rosin market is stronger. Paper making gum rosin is now quoted at $4.40 and wood rosin at $4.30 per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent rosin size is selling at $2.54 per 100 pounds, in tank cars, at works.

SALT CAKE—Steadiness prevails in the salt cake market. Demand from the mills is excellent for the season. Salt cake is quoted at $12 to $13; chrome salt cake at $11 to $12 per ton, at works. Imported salt cake is selling at $12 to $13 per ton, ship side.

SODA ASH—The soda ash market is exhibiting a strong undertone. Contract shipments are moving in good volume. Prices are holding to schedule. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.05; in bags, $1.20; and in barrels, $1.50.

STARCH—No radical changes transpired in the starch market during the past week. Demand from the paper mills is seasonal. Prices remain unchanged. Special paper making starch is quoted at $3.20 per 100 pounds, in bags; and at $3.47 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA—The sulphate of alumina market is steady to firm. Paper mill demand is well sustained. Prices are holding to schedule. Commercial grades are quoted at $1.35 to $1.60; and iron free at $2 to $2.25 per 100 pounds, in bags, at works.

SULPHUR—The sulphur market is steady. Yearly contracts are quoted at $18 per ton, in bulk, on orders of 1,000 tons, or over and $20 on smaller quantities. On spot and nearby car loads the quotation is $21 per ton. All quotations are in car lots, at works.

TALC—Trading in the talc market is moderately active. Supplies are moving into consumption in fairly good volume for the season. Domestic talc is still quoted at $16 to $18 per ton, at eastern mines; while imported talc is selling at $23 to $30 per ton, on dock.

Market Quotations

Paper

Rag Content Bond & Ledgers—Delivered Zone 1

	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—Delivered Zone 1

	Bonds	Ledgers
No. 1 Sulphite	7.75	8.75
No. 2 Sulphite	6.75	7.75
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

Book, Cased—		
S. & S. C.	5.35 @	5.75
S. & S. C. Litho.	5.60 @	6.00
M. F.	5.10 @	5.50
Coated and Enamel	5.90 @	6.55
Coated Litho	5.90 @	6.55
Tissues—Per Ream—		
White No. 1	.82½ @	—
White No. 1 M. G.	.77½ @	—
White No. 1½	.62½ @	—
White No. 2	.60 @	—
Anti-Tarnish M. G.	.67½ @	—
Colored	.80 @	—
Kraft	.67½ @	—
Manila	.60 @	—
Unbleached Toilet	2.60 @	3.30
Bleached Toilet	3.94 @	5.26
Paper Towels—		
Unbleached	2.10 @	3.35
Bleached	3.30 @	3.70
Manila—		
No. 1 Jute	9.00 @	9.25
No. 2 Jute	7.75 @	8.50
No. 1 Wood	4.00 @	5.25
No. 2 Wood	3.50 @	4.00
Fibre Papers—		
No. 1 Fibre	4.25 @	5.50
No. 2 Fibre	4.00 @	4.75

(Delivered New York)

News, per ton—		
Roll, contract	41.00 @	—
Sheets	46.00 @	—
Kraft—		
No. 1 Northern	4.25 @	4.75
Standard	4.12½ @	—
Southern	4.00 @	—
Boards—per ton—		
News	32.50 @	35.00
Chip	32.50 @	35.00
Sgl. Mla. Ll. Chip.	45.00 @	47.50
Jute Lined Chip	42.50 @	45.00
Kraft Liners	60.00 @	62.50
White Pat. Coated	55.00 @	57.50
Binders Boards	67.00 @	75.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—		
Moist	23.00 @	24.00
Dry	23.00 @	24.00
(Delivered)		
No. 1 Domestic and Canadian	27.00 @	28.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—		
Division 1	2.60 @	3.10
Division 2	2.55 @	2.65
Division 3	2.50 @	2.60
Prime Qualities—		
Class 1. All Prime Easy Bleaching	2.05 @	2.10
Other Than Easy Bleaching—		
Class 2 Higher than Standard	2.00 @	2.05
Class 3, Standard	1.95 @	2.00
Class 4. Lower than Standard	1.90 @	1.95
(On Dock, Atlantic Ports)		
Kraft No. 1	1.85 @	2.00
Kraft No. 2	1.70 @	1.80
(F. o. b. Pulp Mill)		
Kraft Domestic	1.80 @	1.90
(Delivered)		
Soda Bleached	2.60 @	—

* Add 60 Cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	7.50 @	8.00
Silesias No. 1	5.50 @	5.75
New Unbleached	8.25 @	8.50
New Soft Blacks	3.75 @	4.00
Blue Overall	5.75 @	6.00
Fancy	3.25 @	3.50
Washables	2.25 @	2.50
Mixed Khaki Cuttings	3.50 @	3.75
O. D. Khaki Cuttings	4.25 @	4.50
Men's Corduroy	2.00 @	2.25
New Mixed Blacks	2.75 @	3.00

Old Rags

White, No. 1—		
Repacked	3.00 @	3.50
Miscellaneous	2.75 @	3.25
White, No. 2—		
Repacked	1.75 @	2.25
Miscellaneous	1.50 @	1.75
Thirds and Blues—		
Repacked	2.25 @	2.50
Miscellaneous	2.10 @	2.20
Roofing Rags—		
No. 1	1.80 @	1.85
No. 2	1.45 @	1.50
No. 3 (bagging)	1.35 @	1.40
No. 4	1.30 @	1.35
No. 5A	.90 @	1.00

Foreign Rags

New Rags

New Dark Cuttings	2.25 @	2.50
New Mixed Cuttings	2.00 @	2.25
New Light Silesias	4.50 @	5.00
Light Flannelettes	4.50 @	5.00
New White Cuttings	7.00 @	7.50
New Light Oxfords	4.00 @	4.50
New Light Prints	3.00 @	3.25

Old Rags

No. 1 White Linens	7.50 @	8.00
No. 2 White Linens	6.50 @	7.00
No. 3 White Linens	4.50 @	5.00
No. 4 White Linens	2.25 @	2.50
No. 1 White Cotton	4.25 @	4.75
No. 2 White Cotton	3.25 @	3.75
No. 3 White Cotton	2.50 @	2.75
No. 4 White Cotton	1.90 @	2.15
Extra Light Prints	2.00 @	2.25
Ord. Light Prints	1.75 @	1.85
Med. Light Prints	1.55 @	1.65
Dutch Blue Cottons	2.25 @	2.50
French Blue Linens	3.50 @	4.00
German Blue Linens	2.50 @	2.75
German Blue Cottons	2.00 @	2.25
Checks and Blues	2.00 @	2.25
Linsey Garments	2.15 @	2.25
Dark Cottons	1.90 @	2.10
Old Shopperies	1.75 @	2.00
New Shopperies	1.75 @	2.00
French Blues	2.25 @	2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	2.10 @	2.15
Domestic	2.00 @	2.10
Wool Tares, light	1.50 @	1.75
Wool Tares, heavy	1.85 @	2.05
Bright Bagging	1.75 @	1.80
Manila Rope—		
Foreign	2.35 @	2.45
Domestic	2.25 @	2.35
Mixed Strings	1.10 @	1.15
New Burlap Cut	2.50 @	2.75
Hessian Jute Threads—		
Foreign	2.60 @	2.75
Domestic	2.80 @	3.00

Old Waste Papers

(F. o. b. New York)

Shavings—		
White Envelope Cuttings	2.55 @	2.65
Ordinary Hard White No. 1	2.25 @	2.35
Hard White No. 2	2.10 @	2.20
Soft White No. 1	2.05 @	2.15
Flat Stock—		
Stitchless	.65 @	.75
Over issue Mag	.65 @	.75
Solid Flat Book	.55 @	.60
Crumpled No. 1	.35 @	.40
Solid Book Ledger	1.50 @	1.65
Ledger Stock	.85 @	.90
New B. B. Chips	.30 @	.35
Manilas—		
New Env. Cut	1.75 @	1.85
New Cuttings	1.35 @	1.45
Bogus Wrapper	.40 @	.50
Old Kraft Machine—Compressed bales	1.25 @	1.35
News—		
No. 1 White News	1.30 @	1.40
Strictly Overissue	.50 @	.60
Strictly Folded	.30 @	.35
No. 1 Mixed Paper	.20 @	.25

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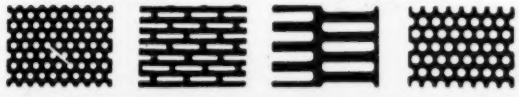

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Twines

(F. o. b. Mill)

(Soft Fibre)

Coarse Polished—			
India	.13¼	@	.15¾
Belg. White Hemp	.14¼	@	.17¾
India Compress	.13¾	@	.14¼
Fine Polished—			
Fine India	.21½	@	.23½
Special	.19½	@	.21½
Unpolished—			
Box	.12	@	.12½
Paper Makers	.09	@	.13½
Tube Rope	.10	@	.15½
Wall Paper	.11	@	.14½
Wrapping	.15½	@	.21
Special	.15	@	.15½
Soft Fiber Rope	.12½	@	.12¾

(Hard Fibre)

Bond	.12	@	.20½
Anchor	.11½	@	.13
Manila	.21	@	.2[illegible]

CHICAGO

Paper

(F. o. b. Mill)

Rag Bond	.12	@	.40
Water Marked Sulphite Bond	.06¾	@	.11
Sulphite Bond	.05½	@	.07¼
Superfine Writing	.18	@	.24
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07	@	.12
Coated Label	.07	@	.08½
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04½	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	4.75	@	5.00
Southern Kraft	3.88	@	4.25
No. 2 Kraft	3.88	@	4.2[illegible]
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue	.05¾	@	.07
White Tissue	.07	@	.09

(Delivered Central Territory)

News, per ton—			
Rolls, contract	42.00	@	—
Sheets, open	47.00	@	—
Boards, per ton—			
Plain Chip	46.50	@	—
Solid News	50.00	@	—
Manila Lined Chip	55.00	@	—
Patent Coated	65.00	@	—
Container Lined—			
85 Test, per 1000 sq. ft.			1.70
100 Test, per 1000 sq. ft.			1.85

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings	1.70	@	2.00
No. 1 Hard White	1.40	@	1.65
No. 1 Soft White	1.25	@	1.50
Ledger & Writings	.60	@	.70
Solid Books	.50	@	.60
Blanks	1.00	@	1.05
Krafts	.80	@	.90
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	.90	@	1.00
Print Manila	.40	@	.50
Overissue News	.40	@	.45
Old Newspapers—			
No. 1	.30	@	.35
No. 1 Mixed Paper	.25	@	.30
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

Rag Content Bond & Ledgers—Delivered Zone 1

	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—Delivered Zone 1

	Bonds	Ledgers
No. 1 Sulphite	7.75	8.75
No. 2 Sulphite	6.75	7.75
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, M. F.	5.00	@	—
Book, S. S. & C.	5.25	@	—
Book, Coated	6.15	@	—
Coated Lithograph	6.15	@	—
No. 1 Jute Manila	10.50	@	—
Manila Sul., No. 1	6.75	@	—
Manila No. 2	4.25	@	—
No. 1 Kraft	6.00	@	—
Southern Kraft	5.00	@	—
News Print Rolls	40.00	@	—
Straw Board	40.00	@	45.00
News Board	40.00	@	—
Chip Board	37.50	@	—
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.08	@	.08½
New White, No. 2	.04½	@	.05
Light Silesias	.05½	@	—
Silesias, No. 1	.04½	@	.05
Black Silesias, soft	.03½	@	.04
New Unbleached	.06	@	—
Washable, No. 1	.02	@	.02½
Blue Overall	.06	@	.06½
Cottons—According to grades—			
Washable, No. 2	.02½	@	.04½
New Blue	.01¾	@	.02¼
Fancy	.03	@	—
New Black Soft	.04	@	.04½
New Light Seconds	.03½	@	.04
New Dark Seconds	1.75	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.04	@	.04½
No. 2 Mixed	.03½	@	.04
Corduroy	.02	@	.02¼
New Canvas	.04	@	.04½
New Black Mixed	.02	@	.02¼

Domestic Rags (Old)

White No. 1—			
Repacked	4.00	@	4.50
Miscellaneous	3.00	@	3.50
Thirds and Blues—			
Miscellaneous	2.00	@	—
Repacked	2.25	@	2.50
Black Stockings (Export)	4.50	@	5.00
Roofing Stock—			
Foreign No. 1	2.20	@	2.25
Domestic No. 1	1.80	@	1.85
Domestic No. 2	1.60	@	1.65
Roofing bagging	1.30	@	—

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	2.00	@	—
Domestic	2.25	@	—
Manila Rope	2.25	@	2.50
Sisal Rope	2.00	@	2.25
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	2.00	@	2.50
No. 2	.90	@	1.00
Wool Tares, heavy	3.00	@	3.25
Mixed Strings	1.00	@	1.10
No. 1 New Light Burlap	3.00	@	3.50
New Burlap Cuttings	2.50	@	2.75

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.30	@	2.40
No. 2 Hard White	2.10	@	2.20
No. 1 Soft White	1.80	@	1.85
No. 2 Soft White	1.40	@	1.45
No. 1 Mixed	—	@	.85
Solid Ledger Stock	1.50	@	1.60
Ledger Stock, white	1.15	@	1.20
Ledger Stock, colored	.85	@	.90
No. 1 Books, heavy	.65	@	.70
Manila Cuttings	1.50	@	1.60
Print Manila	.50	@	.60
Container Manila	.50	@	.60
Kraft Paper	1.10	@	1.20
No. 1 Mixed Paper	.35	@	.40
Straw Board Chip	.40	@	—
Binders Board Chip	.40	@	—
Corrugated Board	.60	@	.65
Overissue News	.60	@	—
Old Newspapers	.40	@	—

BOSTON

Paper

Rag Content Bond & Ledgers—Delivered Zone 1

	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—Delivered Zone 1

	Bonds	Ledgers
No. 1 Sulphite	7.75	8.75
No. 2 Sulphite	6.75	7.75
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04¼	@	—
No. 2 Kraft	.04½	@	—

(Delivered New England points)

Southern Kraft	.04	@	—
News Print Rolls	39.50	@	—
Straw Board, rolls	.009	@	35.00
Filled News Board	40.00	@	45.00
Chip Board	37.50	@	40.00
Single Manila Lined Chip	47.50	@	52.50
Single White, Patent Coated News Board (Bender)	55.00	@	65.00
Wood Pulp Board	70.00	@	75.00
Binder Boards (Standard Grade)	67.00	@	75.00

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.00	@	2.10
No. 1 Soft White	1.75	@	1.85
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.50	@	1.75
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.85	@	.90
No. 1 Books, heavy	.60	@	.70
No. 1 Books, light	.50	@	.60
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.50	@	1.60
No. 1 Old Manila	.60	@	.65
White Blank News	1.20	@	1.25
No. 1 Kraft	1.05	@	1.12½
Mixed Papers	.22½	@	.25
Print Manila	.47½	@	.50
Container Manilas	.27½	@	—
Old Newspapers	.25	@	.27½
Overissue News	—	@	.40
Box Board Chips	—	@	.25
Corrugated Boxes	.35	@	.37½
Kraft corrugated boxes	.90	@	.95
Screening Wrappers	.40	@	.45

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	2.35	@	2.45
Domestic	2.25	@	—
Transmission Rope	1.20	@	1.30
Jute Rope	2.00	@	2.25
Jute Carpet Threads	1.00	@	1.10
Gunny No. 1—			
Foreign	1.90	@	2.00
Domestic	1.80	@	1.90
Bleachery Burlap	4.50	@	5.00
Scrap Burlap—			
Foreign	2.00	@	2.10
Domestic	1.75	@	1.85
Scrap Sisal	1.90	@	2.00
Scrap Sisal for Shredding	2.10	@	2.35
Wool Tares, heavy	1.90	@	2.00
New Burlap Cuttings	2.00	@	2.25
Australian Wool Pouches	2.30	@	2.60
Heavy Baling Bagging	1.95	@	2.00
Paper Mill Bagging	1.75	@	1.85
Bagging No. 2	1.15	@	1.40

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.01¾	@	.02
New White No. 1	.07½	@	.07¾
New White No. 2	.04	@	.04¼
Silesias No. 1	.05	@	.05½
New Black Silesias	.03½	@	.04¼
Soft Unbleached	.07¼	@	.07¾
Blue Cheviot	5.50	@	6.00
Fancy	.02½	@	.02¾
Washable	.0165	@	.0170
Cottons—According to grades—			
Blue Overalls	5.00	@	5.50
New Black, soft	.04	@	.04¾
Khaki Cuttings	.04	@	.04¼
O. D. Khaki	.03¾	@	.04¼
Corduroy	.01¾	@	.02
New Canvas	—	@	.05
B.V.D. Cuttings	—	@	.06¼

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues	1.75	@	2.00
Thirds and Blues—			
Repacked	1.37½	@	1.75
Miscellaneous	1.25	@	1.62½
Black Stockings	3.90	@	4.00
Roofing Stock—			
No. 1	1.80	@	1.90
No. 2	1.40	@	1.50
No. 3	1.20	@	1.25

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.70	@	1.80
New White Shirt Cuttings	6.50	@	6.75
Dutch Blues	2.25	@	2.50
New Checks & Blues	2.50	@	3.00
Old Fustians	1.85	@	2.00
Old Linsey Garments	1.90	@	2.10
New Silesias	5.25	@	6.00

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.11	@	—
No. 2 Sulphite	.08½	@	—
No. 1 Colored	.12	@	—
No. 2 Colored	.09	@	—
Ledgers			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F. (Carloads)	6.50	@	—
No. 2 M. F. (Carloads)	6.00	@	—
No. 3 M. F. (Carloads)	6.00	@	—
No. 1 S. C. (Carloads)	7.00	@	—
No. 2 S. C. (Carloads)	6.50	@	—
No. 3 S. C. (Carloads)	6.50	@	—
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	13.00	@	—
Wrapping—delivered—			
Rag Brown	4.75	@	—
White Wrap	3.50	@	—
"B" Manila	4.80	@	—
No. 1 Manila	5.40	@	—
Fiber	5.40	@	—
Kraft, M. F.	5.90	@	—
Kraft, No. 2	5.40	@	—
News, per ton—			
Rolls (contract)	40.50	@	—
Sheets	45.00	@	—

Pulp

Ground wood	27.00	@	—
Unbleached Sulphite	42.00	@	—
Book (Class 1)	58.00	@	—
Writing (Class 2)	59.00	@	—
Select (Class 3)	60.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	@	2.25
Soft White	1.60	@	1.90
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	1.00
Light and Crumpled Book Stock	.80	@	.90
Ledgers and Writings	1.00	@	1.05
Manilas—			
New Manila Cut	1.25	@	1.40
Printed Manilas	.50	@	—
Kraft	1.00	@	1.60
News and Scrap—			
Strictly Overissue	.55	@	—
Strictly Folded	.50	@	—
No. 1 Mixed Paper	.40	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.07½	@	.07¾
Fancy Shirt Cuttings	.02¾	@	.03

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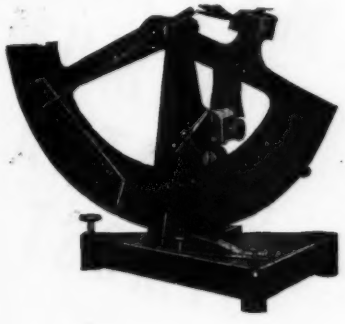
TEARING TEST

The Most Important Test for Paper



Tearing is the severest stress that paper is subjected to in everyday general use.

The suitability of paper for all purposes depends so much upon its resistance to tearing that the success of modern manufacturing and processing methods requires definite knowledge of this important property of paper. This definite knowledge must be based on scientific data and can be secured only by using an instrument that is approved by the technicians of the paper industry. The Elmendorf Tearing Tester fulfills these requirements.

The Elmendorf Tearing Tester was developed especially so that tearing tests can be made and the results expressed in terms that are understood easily and that are communicated easily.

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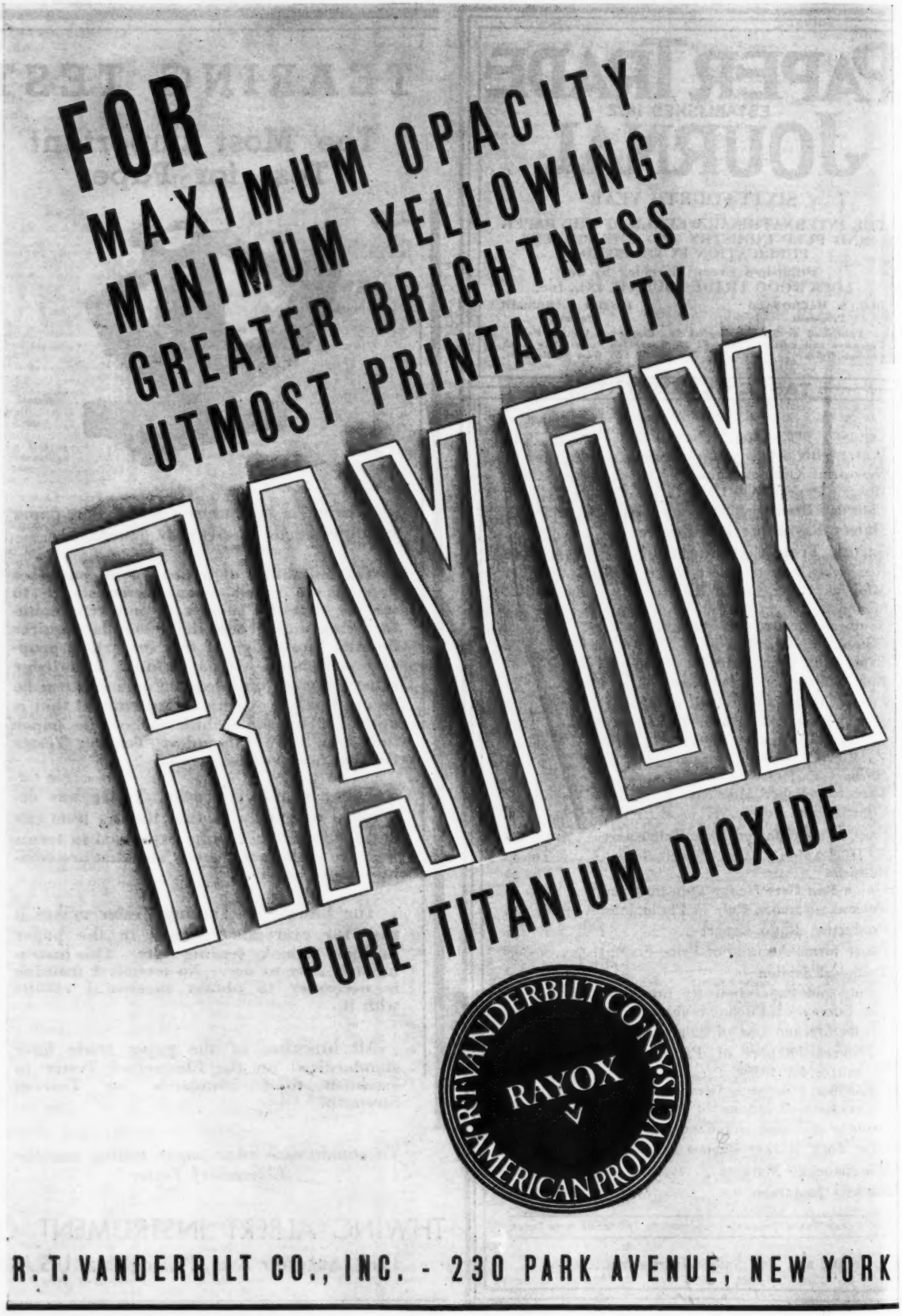
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